PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
RRV1377

FM/AM DIGITAL SYNTHESIZER TUNER
F-C5RDS

FM/AM TUNER
F-C3

- **Refer to the service manual RRV1108 for F-C5RDS/HE and RRV1049 for F-C3/HE.**

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	The voltage can be converted by the following method.
	F-C5RDS	F-C3		
HE8	O	O	AC220-230V	AC240V, *
HEWZI8	O	O	AC220-230V	AC240V, *

* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

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T-FFF AUG. 1995 Printed in Japan

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	→	*56 × 10¹*	→ *561*	*RD1/8PM 5 6 1 J*
47kΩ	→	*47 × 10³*	→ *473*	*RD1/4PS 4 7 3 J*
0.5Ω	→	*0R5*		*RN2H 0 R 5 K*
1Ω	→	*010*		*RS1P 0 1 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	→	*562 × 10¹*	→ *5621*	*RN1/4PC 5 6 2 1 F*

1. CONTRAST OF F-C5RDS/HE8 AND F-C5RDS/HE

F-C5RDS/HE8 and F-C5RDS/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		F-C5RDS/HE	F-C5RDS/HE8	
	Tuner assy	AWE7007	AWE7006＊	
	Tuner assy	AWZ7272	AWZ7271＊	
	Power assy	AWZ7275	AWZ7274＊	
	Rear panel	ANC7095	ANC7297	
⚠	Ferrite core	Not used	ATX7001＊	
	Screw	Not used	ABA1047＊	
NSP	Plate (GND)	Not used	ANK1120＊	
	FM antenna	ADH1005	ADH1002	

Note : Parts marked ＊ are the same as those of F-C5RDS/HEWZI which is shown with F-C5RDS in the service manual RRV1108.

2. CONTRAST OF F-C5RDS/HEWZI8 AND F-C5RDS/HEWZI

Although F-C5RDS/HEWZI8 and F-C5RDS/HEWZI are different in model name, they consist of the same components.

P.S

F-C5RDS/HEWZI8 is made a design change like the following:

Mark	Description	OLD	NEW
	Ferrite core	ATX7001	Not used
⚠	Ferrite core	Not used	ATX7001

Power assy (AWZ7274) is made a design change like the following:

Mark	Description	OLD	NEW
⚠	C601	ACG1002 (0.01μF/400V)	ACG7020 (0.01μF/250V)

Tuner assy (AWZ7271) is made a design change like the following:

Mark	Description	OLD	NEW
	C559	CKDYB102K50	Not used
⚠	C559	Not used	CKDYB102K50

3. CONTRAST OF F-C3/HE8 AND F-C3/HE

F-C3/HE8 and F-C3/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		F-C3/HE	F-C3/HE8	
NSP	Tuner assy	AWE7002	AWE7019	
	Main assy	AWZ7048	AWZ8214*	
	Rear panel	ANC7058	ANC7296	
	Screw	Not used	ABA1047	
	Spacer	AEC1236	Not used	
	FM antenna	ADH1005	ADH1002	

Note* :Refer to 2. PCB PARTS LIST and 3. SCHEMATIC AND PCB DIAGRAMS.

4. CONTRAST OF F-C3/HEWZI8 AND F-C3/HEWZI

F-C3/HEWZI8 and F-C3/HEWZI have the same construction except for the following:

Mark	Symbol & Description	F-C3/HEWZI	F-C3/HEWZI8
⚠	Fuse (FU2, T2A/250V)	Not used	AEK – 511*

Note* :Refer to 3. SCHEMATIC AND PCB DIAGRAMS.

P.S

Main assy (AWZ7049) is made a design change like the following:

Mark	Description	OLD	NEW
⚠	C309	ACG1002 (0.01μF/400V)	ACG7020 (0.01μF/250V)
	L301	ATF 1135	Not used
⚠	L301	Not used	ATF1135
	C1	CKDYX103M25	Not used
⚠	C1	Not used	CKDYX103M25

2. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω → 56 × 10¹ → 561 ..... RD1/8PM561J
47kΩ → 47 × 10³ → 473 ..... RD1/4PS473J
0.5Ω → 0R5 ..... RN2H0R5K
1Ω → 010 ..... RS1P010K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

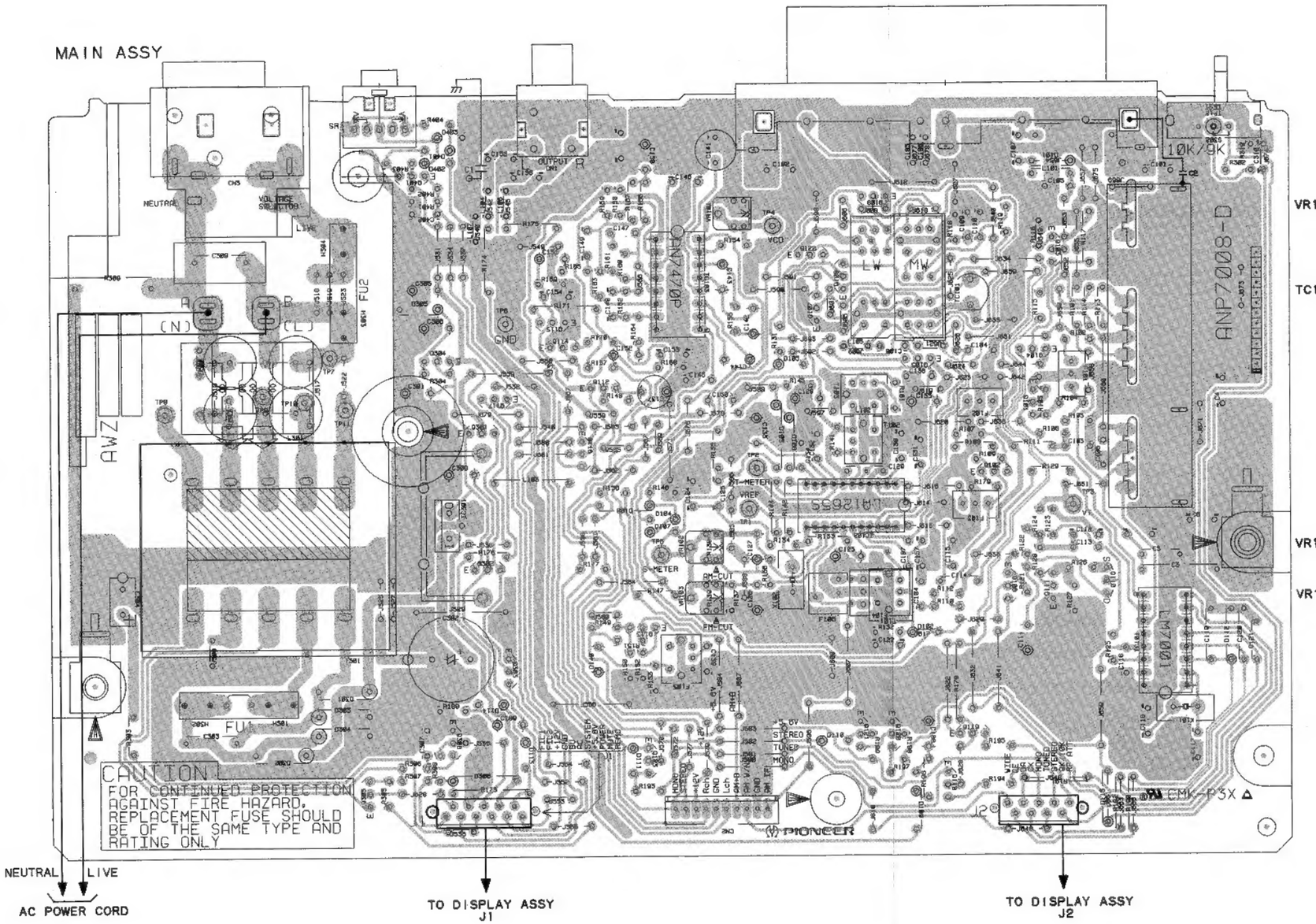
5.62kΩ → 562 × 10¹ → 5621 ..... RN1/4PC5621F

Mark	No.	Description	Parts No.
		MAIN ASSY (AWZ8214)	
		SEMICONDUCTORS	
	IC103		AN7470P
	IC102		LA1265S
	IC101		LM7001J
	IC301		NJM7812AS
	Q301		2SA1529
	Q103, Q112 – Q115, Q117 – Q119		2SC1740S
	Q305, Q401		2SC1740S
	Q111		2SC1740SLN
	Q101, Q102		2SC2668
	Q304		2SD438
	Q110		2SK246
	Q104, Q106, Q108		XDA124ES
	Q116, Q302		XDA143ES
	Q105, Q107, Q109, Q122, Q303		XDC143ES
	Q306		XDC143ES
	D102 – D108, D113, D114, D306		1SS252
	D401, D402		1SS252
	D101		1SV156
	D112, D305, D403		RD6.2ESB
	D301 – D304		S5566
		COILS AND FILTERS	
	L102		ATE – 079
	F103		ATF – 107
	F101, F102		ATF – 119
	F104		ATF – 208
	F105		ATF1088
⚠	L301	(180μH, AC250V)	ATF1135
	L101		LAU2R2J
	L103, L104, L106		LAU2R2K
	L107		LAU330J
		TRANSFORMERS	
⚠	T301	(6.5VA)	ATT1226
		CAPACITORS	
	C303	(0.047μF, 25V)	ACG – 009
⚠	C309	(10000PF, AC250V)	ACG7020
	C304		ACH1246
	C109, C117, C118		CCDCH150J50
	C187		CCPUSL270J50
	C115		CCPUSL470J50
	C138		CEANP4R7M50
	C133		CEAS010M50
	C127		CEAS100M50
	C128, C137, C301		CEAS101M16
	C143		CEAS1R5M50
	C189		CEAS220M25
	C302		CEAS222M35
	C126, C151, C152		CEAS2R2M50
	C111		CEAS330M16
	C142		CEAS3R3M50
	C135, C150, C305, C306		CEAS470M10
	C123, C140		CEAS4R7M50
	C144		CEASR22M50
	C308		CEHAQ330M16
	C112		CFTXA224J50
	C105, C107		CKDYB103K50
	C139		CKDYB122K50
	C124		CKDYB222K50
	C155, C156		CKDYB332K50
	C132		CKDYF103Z50
	C122, C130, C131, C4		CKDYF223Z50
⚠	C1		CKDYX103M25
	C110, C125, C146		CKDYX473M25
	C185, C307, C402		CKPUYB101K50
	C101, C102, C186		CKPUYB102K50
	C147		CKPUYB121K50
	C134		CKPUYB331K50
	C184		CKPUYF223Z25
	C108		CKPUYF473Z16
	C103, C104, C106, C113, C114		CKPUYY103M16
	C116, C129, C136, C145		CKPUYY103M16
	C148, C149		CQMA102J50
	C141		CQPA471J100
		RESISTORS	
	R117		RD1/2PM681J
	VR101	(4.7kΩ)	ACP1042
	VR102	(10kΩ)	ACP1043
	VR103	(22kΩ)	ACP1044
		Other Resistors	RD1/8PM□□□J
		OTHERS	
		SCREW	ABA1012
		ANTENNA TERMINAL 2 – P	AKA1012
	CN1	PIN JACK(2P)	AKB1146
	CN8220	JACK	AKN – 209
⚠	CN3	AC SOCKET 1 – P	AKP1034
	H301 – H304	FUSE CLIP	AKR1003
		CABLE HOLDER	AKT1007
		CABLE HOLDER	AKT1023
		HEAT SINK M	ANH – 697
	X101	CRYSTAL RESONATOR	ASS1042
	X102	CERAMIC RESONATOR	ATF1027
		AM RF TUNING BLOCK	AXX1026
		4 SERIAL F.E. MODULE ASSY	AXQ1004

Note: 4 serial F.E. module assy has no servise part.

3. SCHEMATIC AND PCB DIAGRAMS

● This diagram is viewed from the mounted parts side.



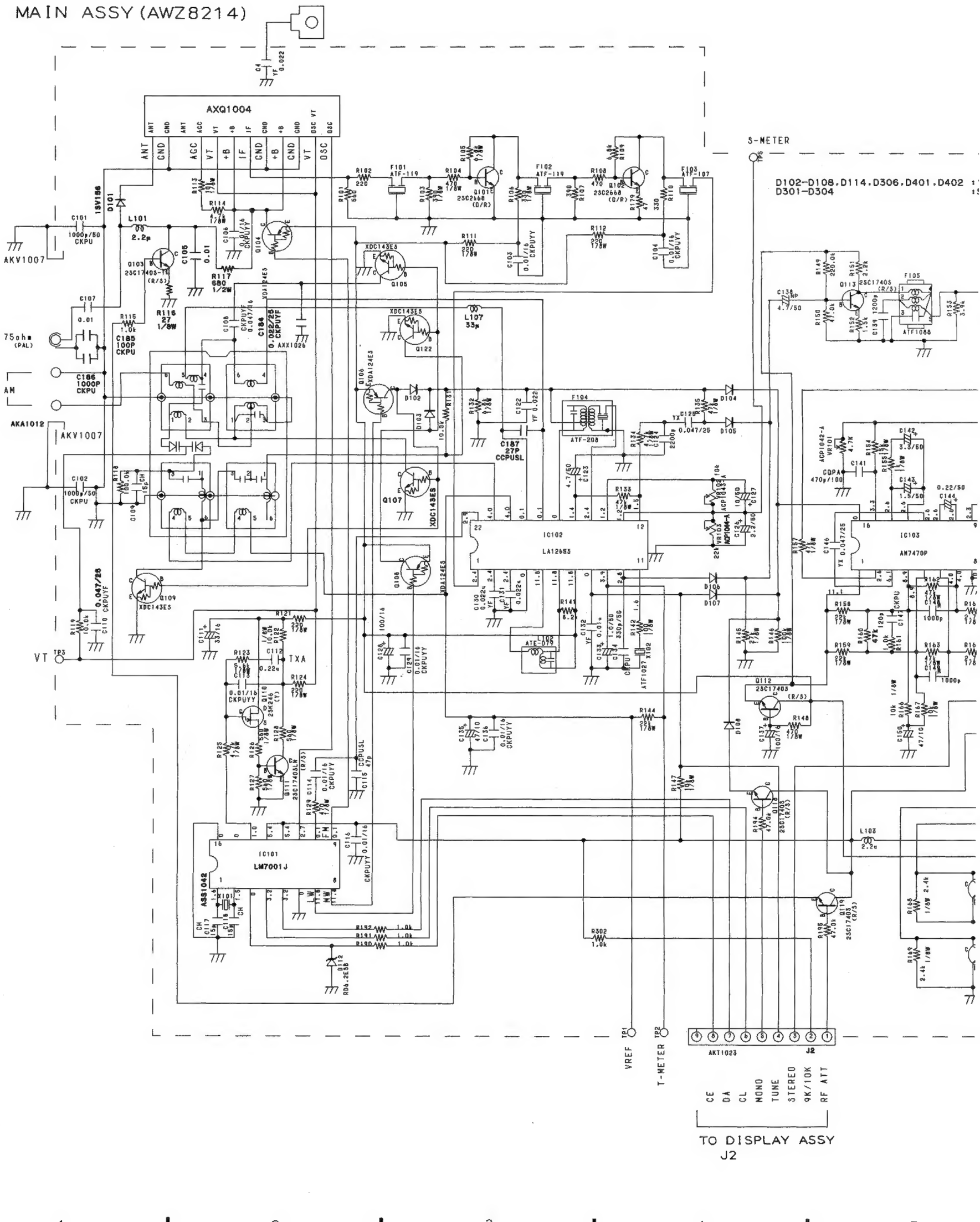
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
Q504 E C B Q504	Q504 Q504	Transistor
D203 D203	D203	Diode
C513 C513	C513	Capacitor (Polarized)

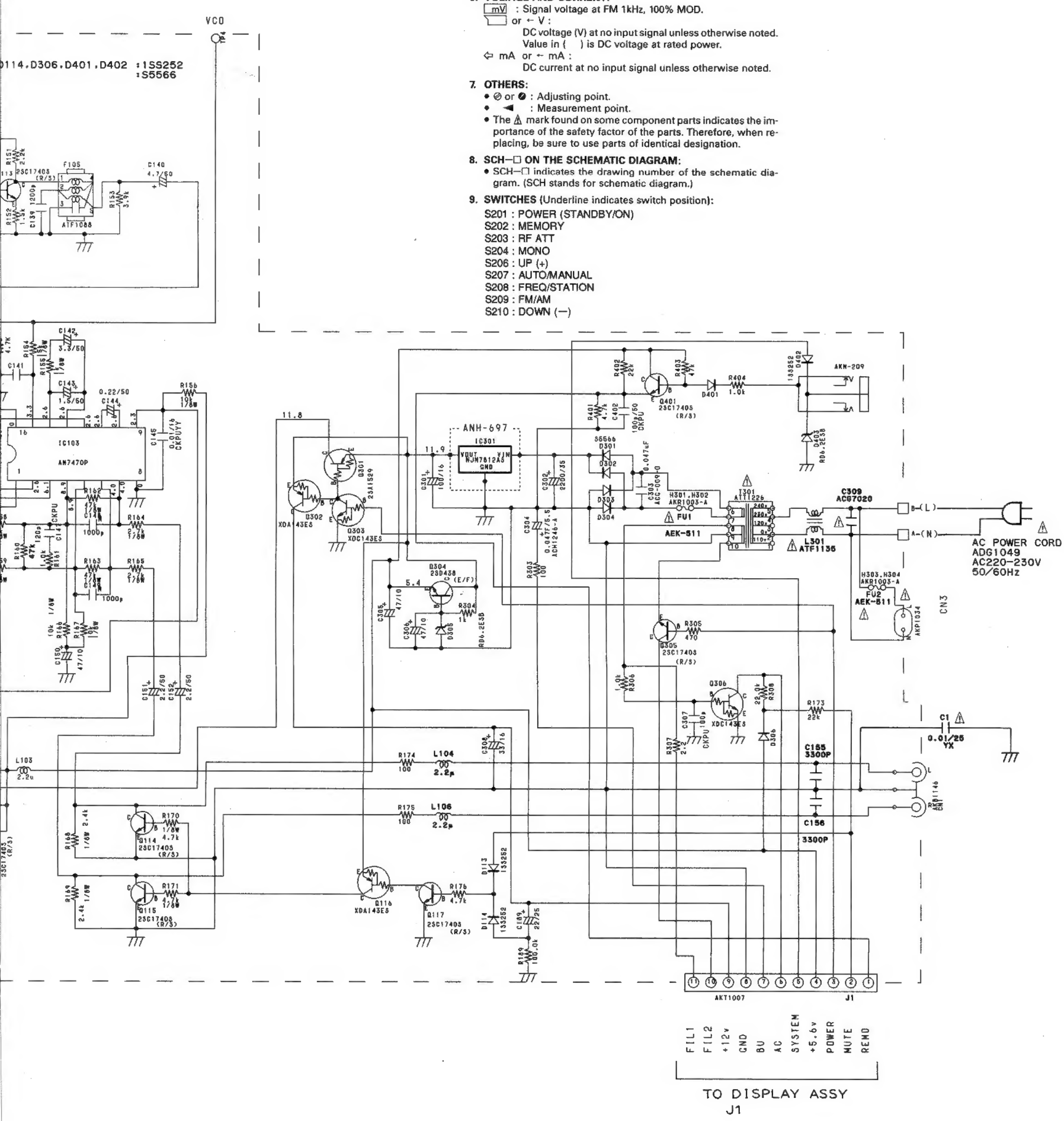
3. The transistor terminal marked with E or ⊏ shows the emitter.
4. The diode terminal marked with ◎ or ⊐ shows cathode side.
5. The capacitor terminal marked with ◎ or ⊏ shows negative terminal.
6. The parts mounted on each PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

MAIN ASSY (AWZ8214)



NOTE FOR SCHEMATIC DIAGRAMS (Type 3A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or µF unless otherwise noted.
   Ratings: capacitor (µF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or µH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   mV : Signal voltage at FM 1kHz, 100% MOD.
   ⌐ or ← V :
   DC voltage (V) at no input signal unless otherwise noted.
   Value in ( ) is DC voltage at rated power.
   ⇦ mA or ← mA :
   DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◄ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH—□ ON THE SCHEMATIC DIAGRAM:**
   - SCH—□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):
   S201 : POWER (STANDBY/ON)
   S202 : MEMORY
   S203 : RF ATT
   S204 : MONO
   S206 : UP (+)
   S207 : AUTO/MANUAL
   S208 : FREQ/STATION
   S209 : FM/AM
   S210 : DOWN (—)



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PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
RRV1049

FM/AM TUNER
F-C3

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	The voltage can be converted by the following method.
	F—C3		
KU	○	AC120V	—
HE	○	AC220—230V	AC240V, ✱
HB	○	AC240V	AC220—230V, ✱
HEWZI	○	AC220—230V	AC240V, ✱

✱ : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

• **For HEWZI and HB types, refer to page 25.**

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols -▮⊟- (fast operating fuse) and/or -▮⊠- (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible -▮⊟- (fusible de type rapide) et/ou -▮⊠- (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

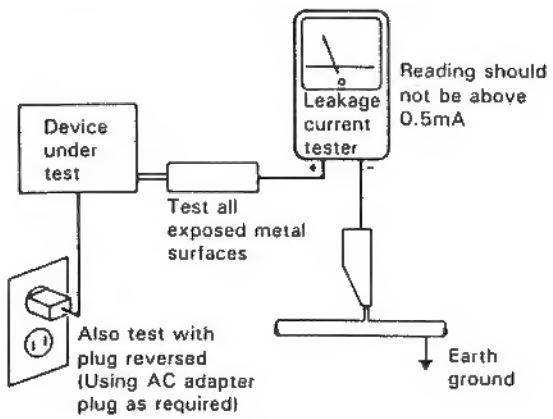
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

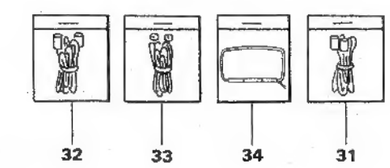
2. EXPLODED VIEWS, PACKING AND PARTS LIST

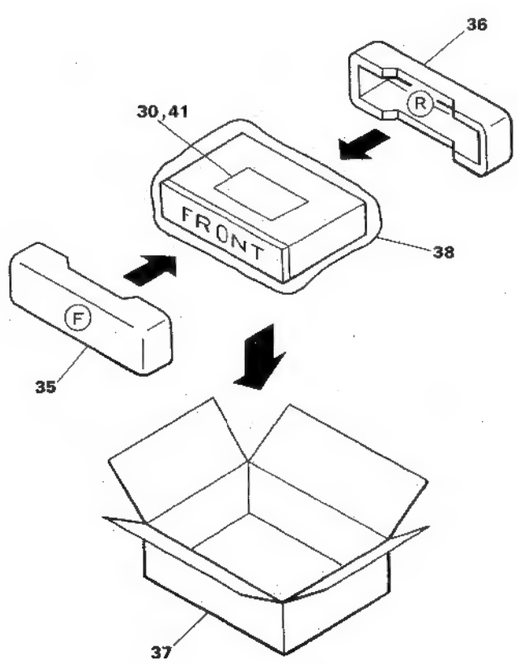
NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

• Parts List (FOR F—C3/KU and HE)

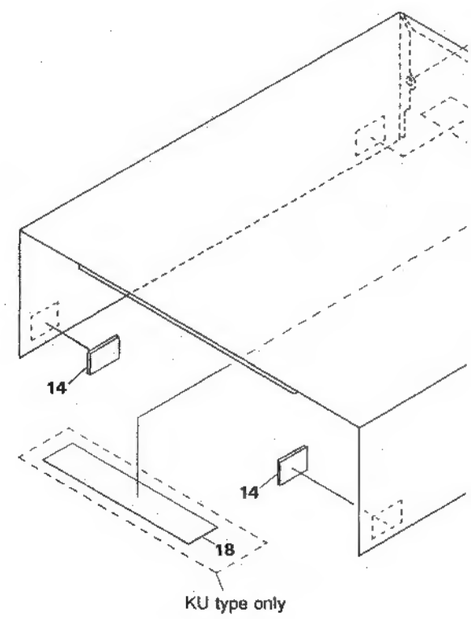
Mark	No.	Description	Parts No.
	1	3—SERIAL F.E.MODULE ASSEMBLY	AXQ1003
	2	FRONT PANEL (For KU type)	AMB7079
	2	FRONT PANEL (For HE type)	AMB7027
	3	SUB PANEL (For KU type)	AMB7073
	3	SUB PANEL (For HE type)	AMB7029
	4	FRONT PANEL (AL)	ANB7001
⚠	5	FU1 (500mA/125V) (For KU type)	AEK—136
⚠	5	FU1 (T400mA/250V) (For HE type)	AEK—504
⚠	6	FU2 (T2A/250V) (HE type only)	AEK—511
⚠	7	AC POWER CORD (For KU type)	ADG1058
⚠	7	AC POWER CORD (For HE type)	ADG1049
NSP	8	SPACER (HE type only)	AEC1236
NSP	9	PCB POST (HE type only)	DEC1390
NSP	10	CHASSIS	ANA7006
	11	REAR PANEL (For KU type)	ANC7060
	11	REAR PANEL (For HE type)	ANC7058
	12	INSULATOR	PNW2363
	13	WASHER	ABE7001
	14	CUSHION RUBBER	AEB7004
	15	BINDER	AEC—826
⚠	16	CORD STOPPER (For KU type)	AEP—113
⚠	16	CORD STOPPER (For HE type)	AEC—882
NSP	17	PCB MOULD	AMR1525
	18	65 LABEL (KU type only)	ORW1069
	19	SCREW (STEEL)	ABA1006
	20	SCREW	ABA1018
	21	SCREW	BBZ30P080FZK
	22	SCREW	BBZ30P100FZK
	23	SCREW	BPZ26P080FMC
	24	DISPLAY PANEL	AAK7059
	25	LED LENS	PNW2019
	26	NAME PLATE (AL)	RAN1013
	27	BUTTON	AAD7015
	28	BUTTON	RAC1859
	29	BONNET	ANE7010
	30	OPERATING INSTRUCTIONS (English) (For KU type)	ARB7005
	30	OPERATING INSTRUCTIONS (English/German/French/Italian/ Swedish/Spanish/Dutch/ Portuguese) (For HE type)	ARE7010
	31	PLUG CORD	ADE—052
	32	CORD WITH PLUG	ADE—085
	33	FM ANTENNA	ADH1005
	34	LOOP ANTENNA	ATB1006
	35	F.PAD	AHA7010
	36	R.PAD	AHA7011
	37	PACKING CASE (For KU type)	AHD7015
	37	PACKING CASE (For HE type)	AHD7014
	38	PACKING SHEET	AHG1093
	39	MAIN ASSEMBLY (For KU type)	AWZ7050
	39	MAIN ASSEMBLY (For HE type)	AWZ7048
	40	DISPLAY ASSEMBLY (For KU type)	AWZ7043
	40	DISPLAY ASSEMBLY (For HE type)	AWZ7041
	41	SUB OPERATING INSTRUCTIONS (English/German/French/Italian/ Swedish/Spanish/Dutch/Portuguese) (For HE type)	ARH7003

• Packing

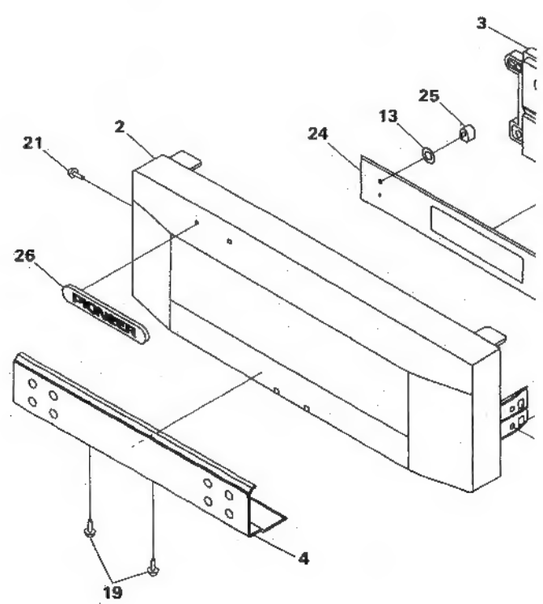


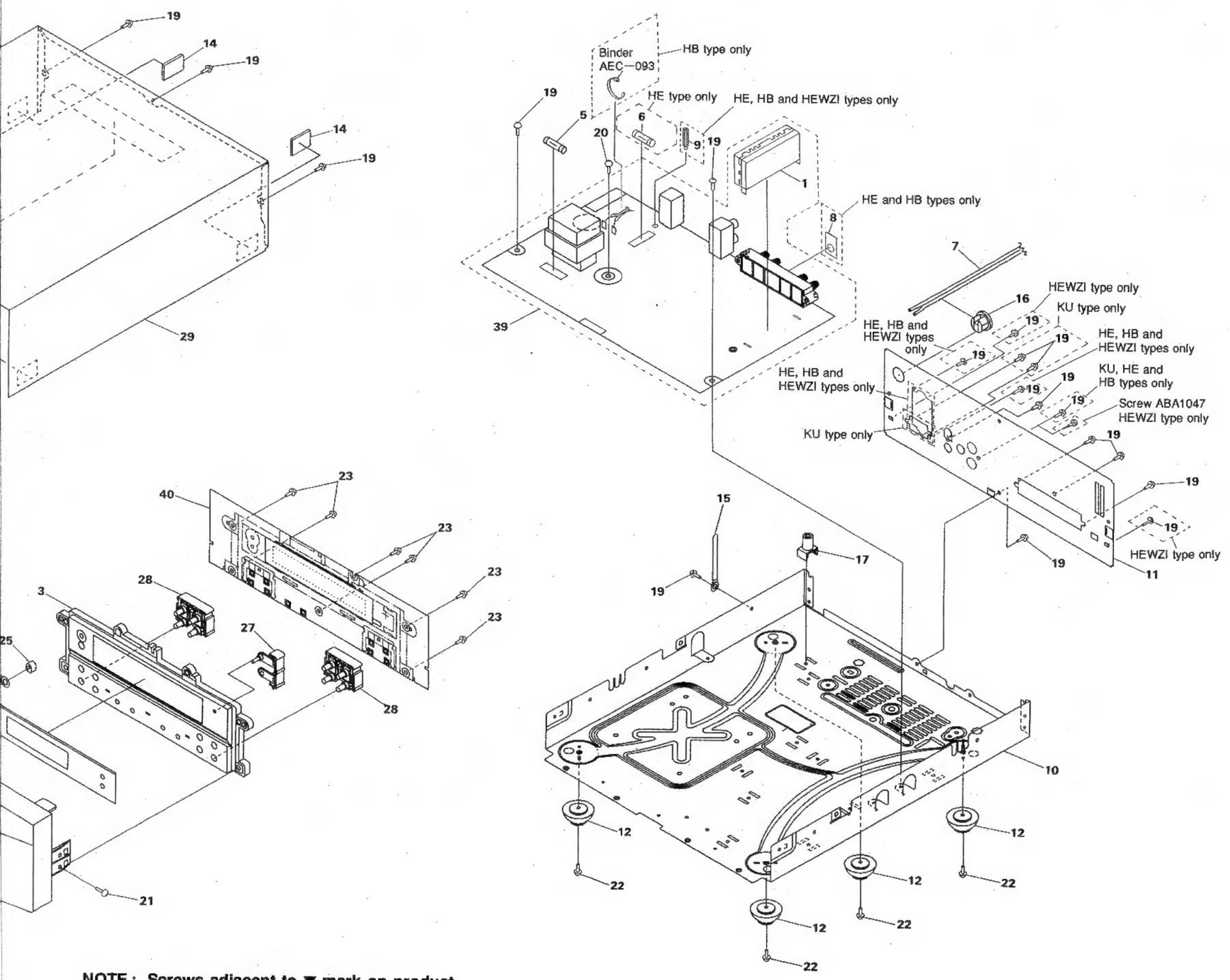


• Exploded View



KU type only





NOTE : Screws adjacent to ▼ mark on product are used for disassembly.

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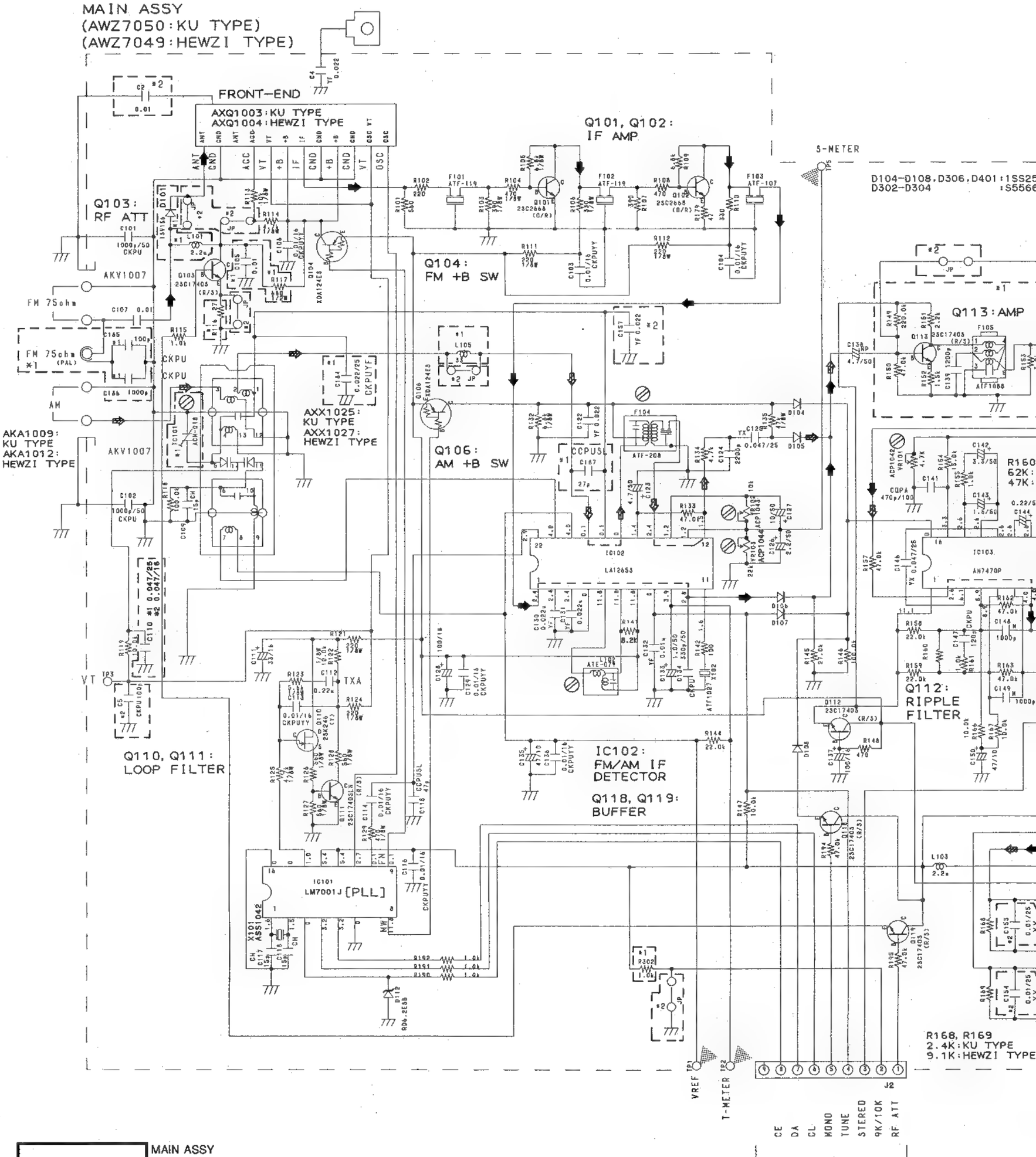
3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

3.1 MAIN ASSY (For KU and HEWZI types)



SCH-1 MAIN ASSY (KU, HEWZ)

NOTE FOR SCHEMATIC DIAGRAMS (Type 3A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   mV : Signal voltage at FM 1kHz, 100% MOD.
   ⊐ or ← V :
   DC voltage (V) at no input signal unless otherwise noted.
   Value in ( ) is DC voltage at rated power.
   ⇦ mA or ← mA :
   DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◄ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH—□ ON THE SCHEMATIC DIAGRAM:**
   - SCH—□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):
   S201 : POWER (STANDBY/ON)
   S202 : MEMORY
   S203 : RF ATT
   S204 : MONO
   S206 : UP (+)
   S207 : AUTO/MANUAL
   S208 : FREQ/STATION
   S209 : FM/AM
   S210 : DOWN (—)

SCH—1

➡ : FM Signal route
➡ : AM Signal route

*1 : HEWZ1 TYPE ONLY
*2 : KU TYPE ONLY

FU1
AEK—136 : KU TYPE
AEK—504 : HEWZ1 TYPE

R160
62K : KU TYPE
47K : HEWZ1 TYPE

Q301, Q302:
+12V SW

Q303:
+12V SW DRIVER

IC301:
+12V REGULATOR

IC103:
FM MPX

Q401:
BUFFER

⚠ AC POWER CORD
ADG1058
AC120V 50/60Hz
(KU TYPE)
ADG1049
AC220~230V 50/60Hz
(HEWZ1 TYPE)

LIVE

NEUTRAL

POWER TRANSFORMER

Q305:
FL POWER SW

⚠ CN3 AC SOCKET 1—P
AKP1078 : KU TYPE
AKP1034 : HEWZ1 TYPE

Q304:
+5.6V REGULATOR

Q306:
AC
WAVEFORMER

Q114, Q115:
MUTE

Q116, Q117:
INVERTER

J1

FIL1
FIL2
+12v
GND
BU
AC
SYSTEM
+5.6v
POWER
MUTE
REMO

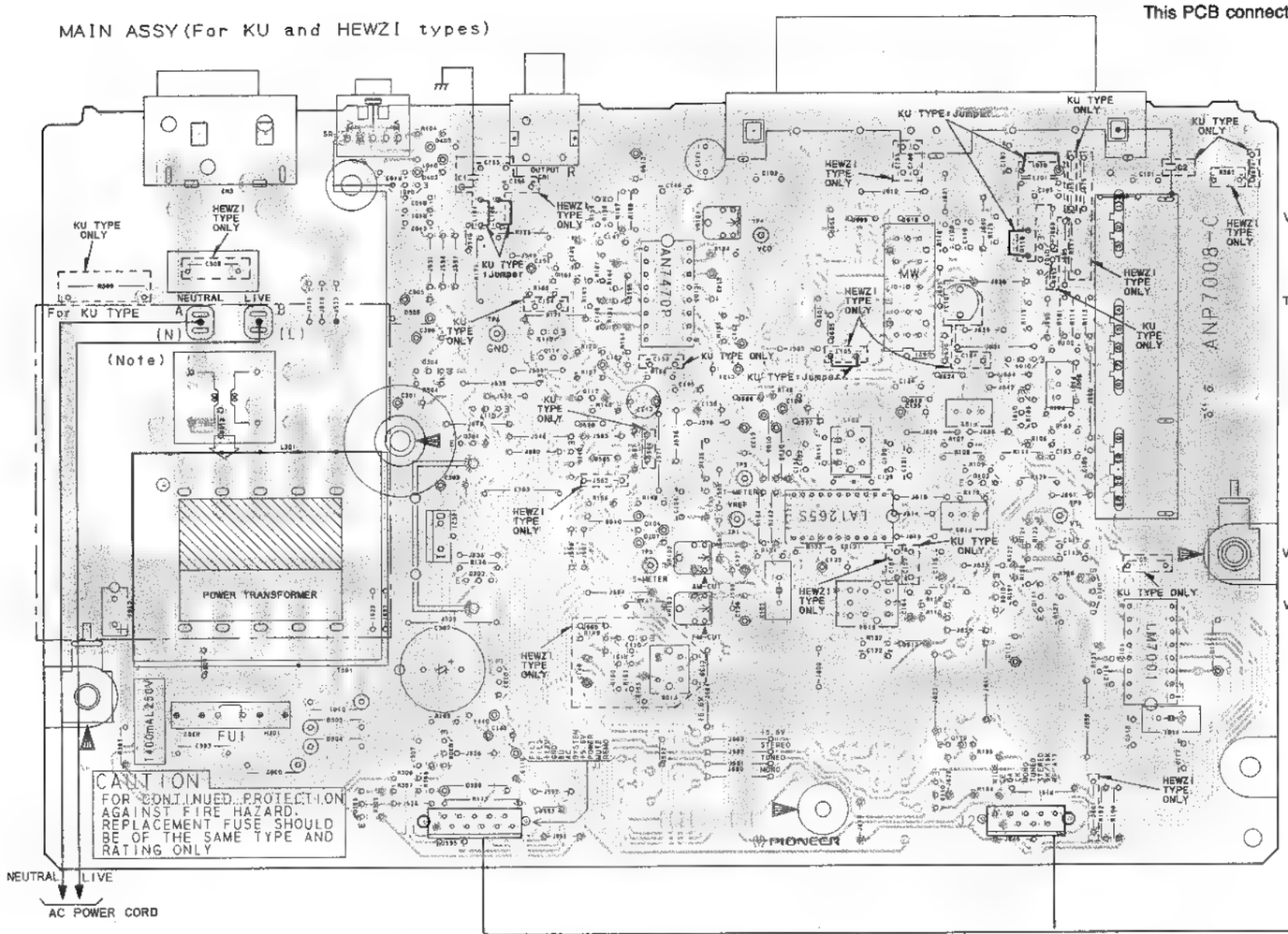
TO DISPLAY ASSY
J1 (→SCH—3)

MAIN ASSY
(KU, HEWZ)

SCH-1

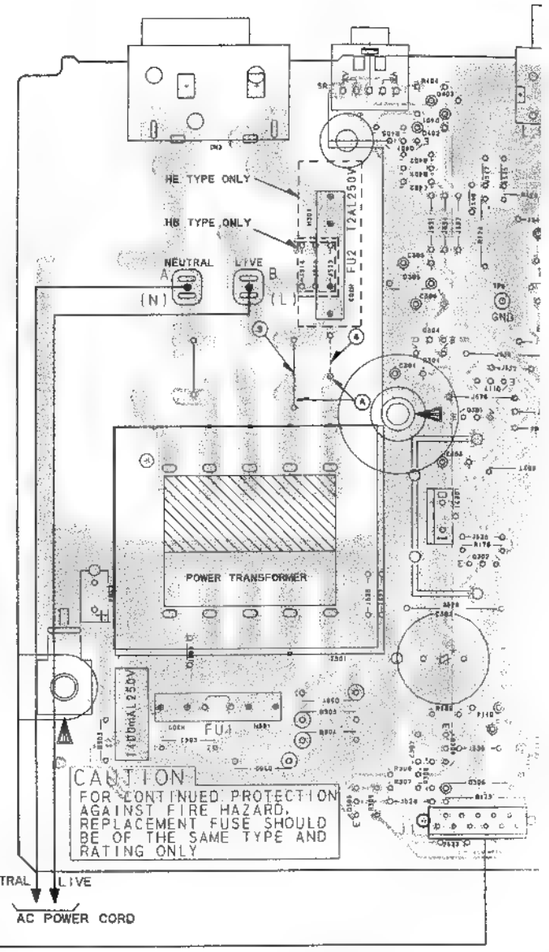
This PCB connection diagram is viewed from the parts mounted side.

MAIN ASSY(For KU and HEWZI types)

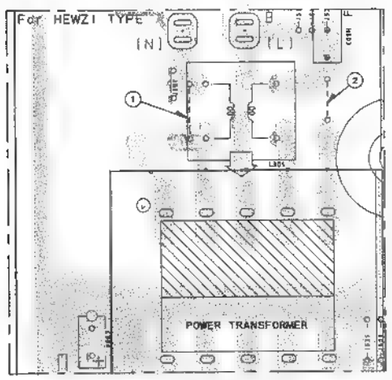


Q401
VR101
Q103
IC103
TC101
Q115
Q114
Q304 Q104
Q112
Q117 Q101
Q301
Q116
Q102
IC102
IC301
VR102
Q302
Q110
VR103
Q106 Q111
IC101
Q303
Q119
Q306
Q118
Q305

MAIN ASSY(For HE and HB types)



Note:For HEWZI type,PCB diagram is changed into the following:



Line Voltage Selection (For HEWZI)

Line Voltage can be changed by the following modification:

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the L301 with the jumper-lines ① and ② follows.

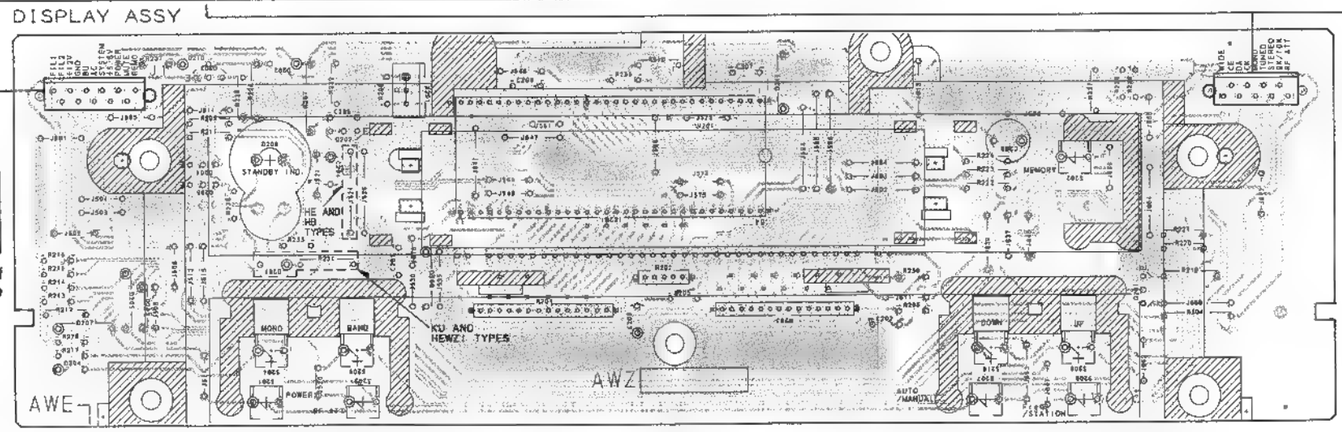
Voltage	L301 or jumper—lines
220V—230V	Change the jumper—lines ① and ② into the L301.
240V	Change the L301 into the jumper—lines ① and ②.

NOTE: When replacing a PCB which has the primary winding circuit of Power-transformer, be sure to compare its circuit with the diagram in Service Manual.
jumper-lines on the PCB may have to be removed.
Forgetting this check-up will cause a serious damage.

4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

DISPLAY ASSY



Q203 Q204 Q206 Q202 IC201 Q201

Line Volt

Line Voltage
1. Disconnec
2. Remove th
3. Change th

Voltage
220V—230
240V

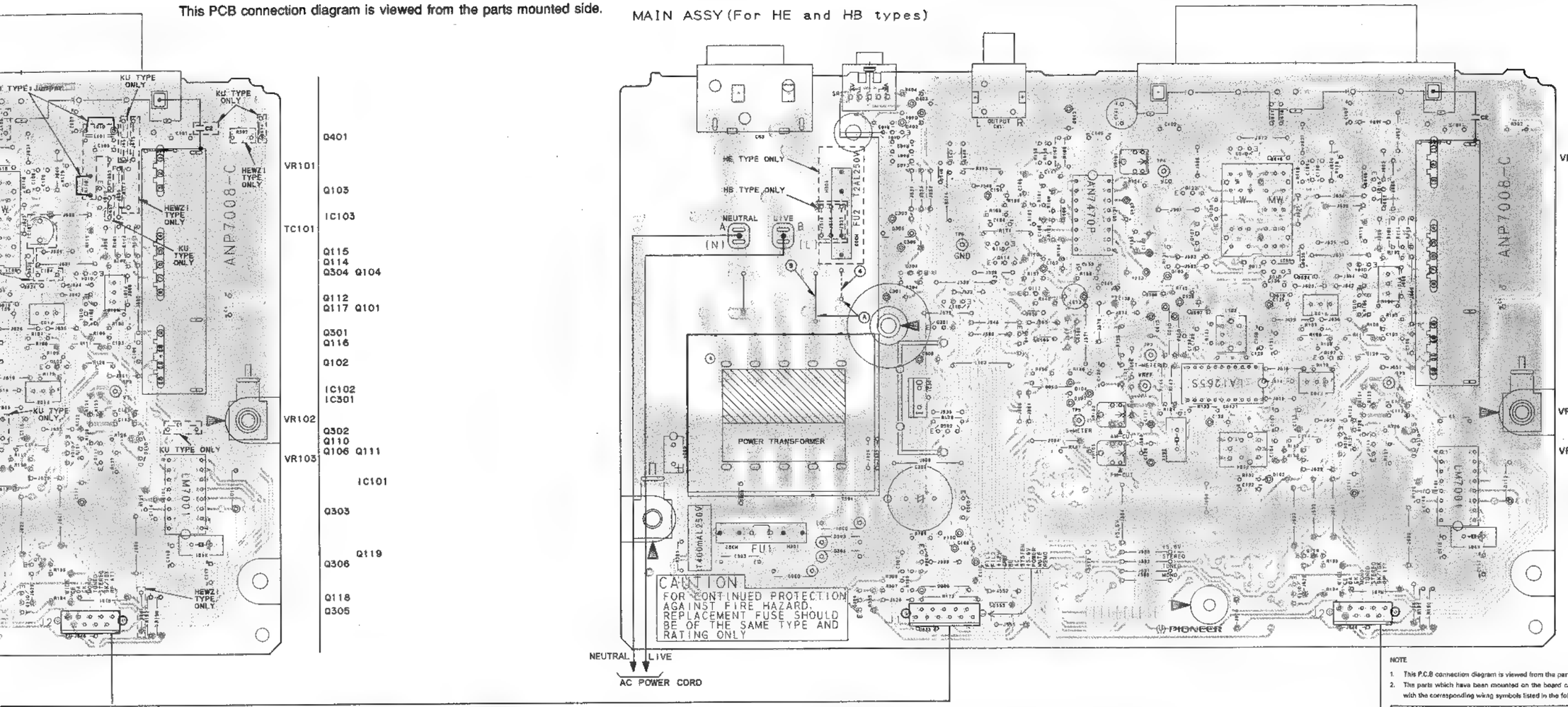
NOTE: Wher
circui
circul
jumpe
Forge

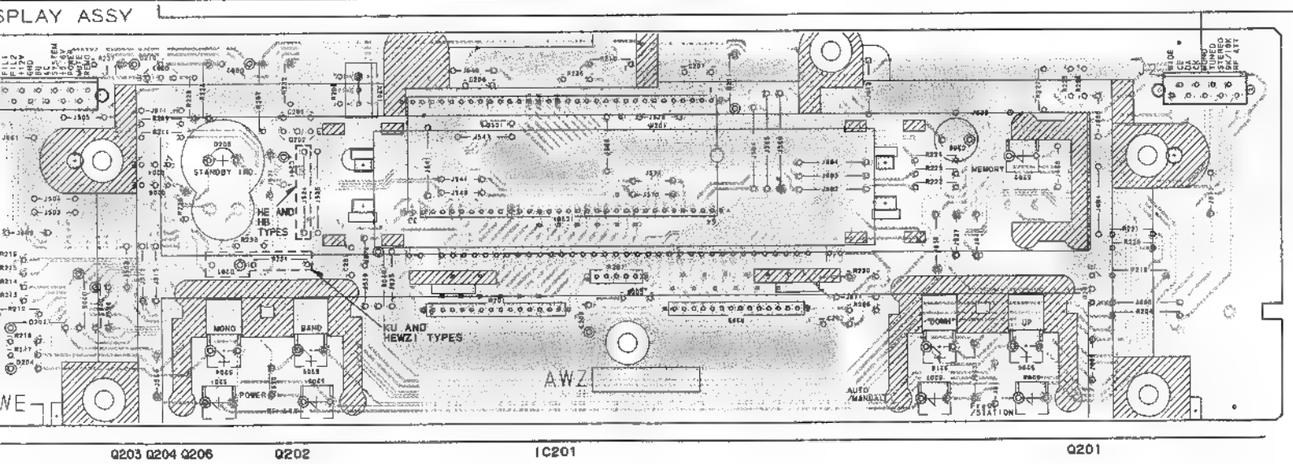
4. Stick the l

Part No.
AAX—19
AAX—19

This PCB connection diagram is viewed from the parts mounted side.

MAIN ASSY (For HE and HB types)





Line Voltage Selection (For HE and HB)

Line Voltage can be changed by the following modification:

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the position of the jumper-lines Ⓐ follows.

Voltage	jumper—line Ⓐ position
220V—230V	③
240V	④

NOTE: When replacing a PCB which has the primary winding circuit of Power-transformer, be sure to compare its circuit with the diagram in Service Manual. Jumper-lines on the PCB may have to be removed. Forgetting this check-up will cause a serious damage.

4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX—193	220V label
AAX—192	240V label

NOTE

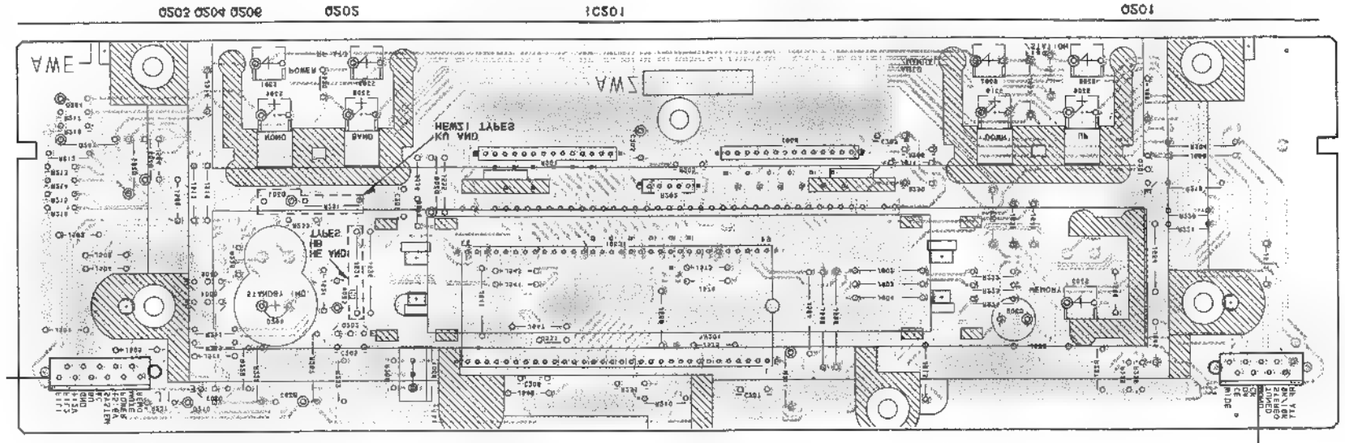
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q304	Q304 or	Transistor
Q215	Q215 or	Radiator type transistor
D205	D203	Diode
R237	R237	Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

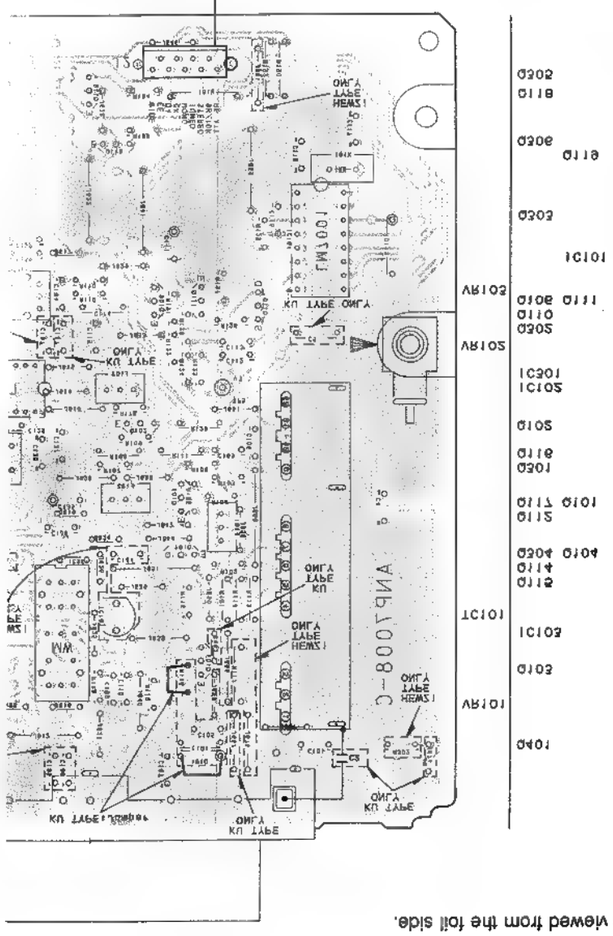
Others

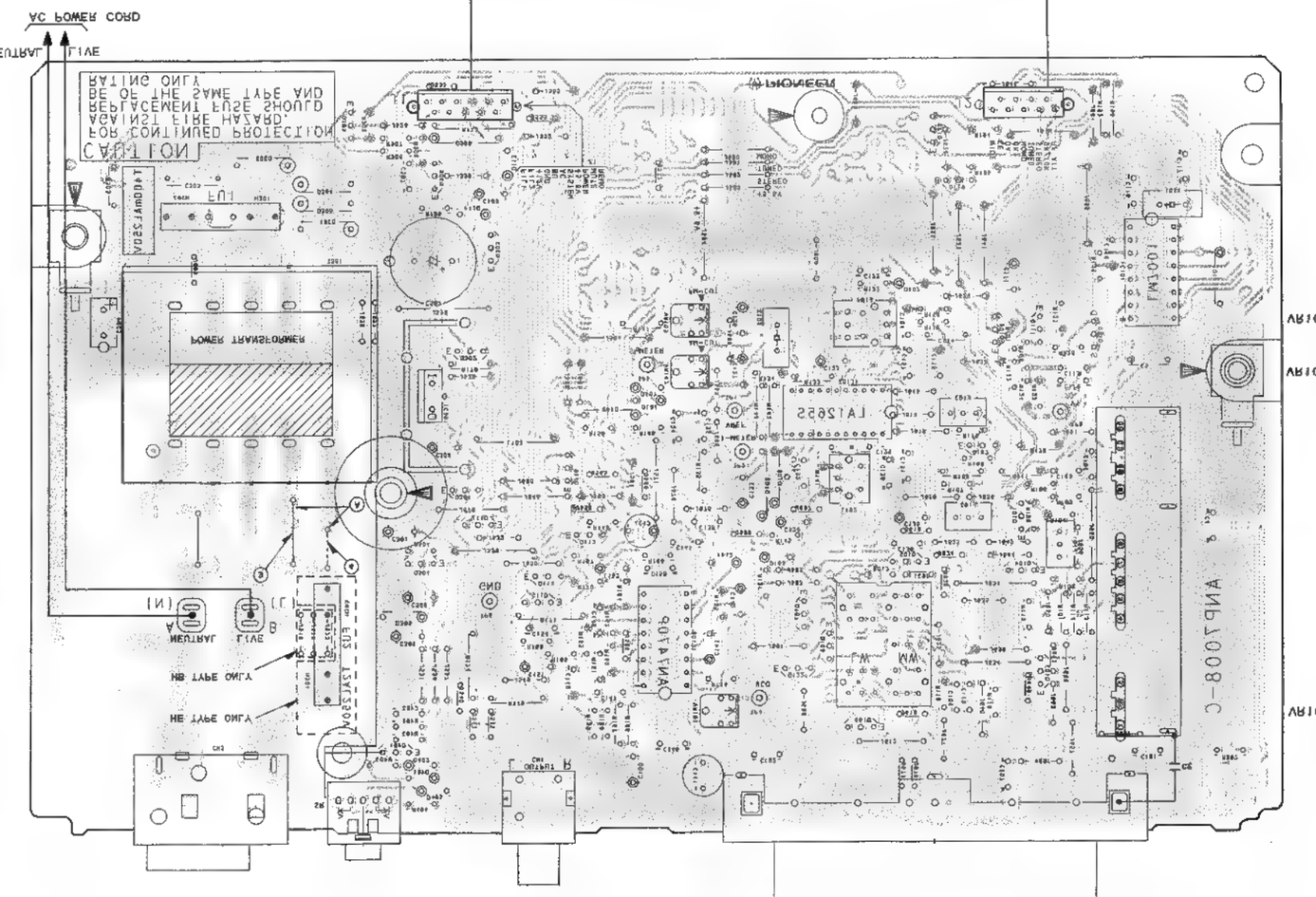
P.C.B. pattern diagram indication	Part Name
IC	IC
ⅡⅡ	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ⊖ (double circles) shows negative terminal.
4. The diode terminal marked with ⊖ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.



DISPLAY ASSY

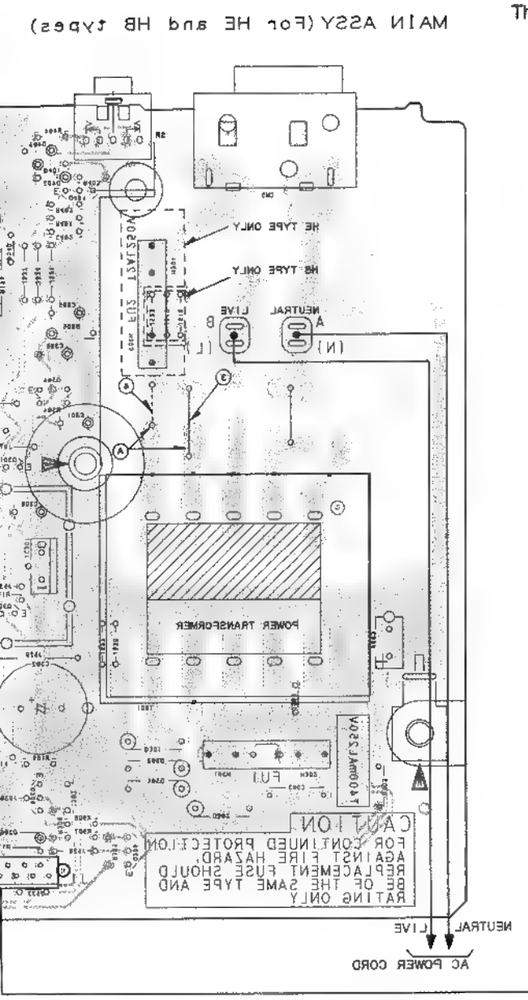


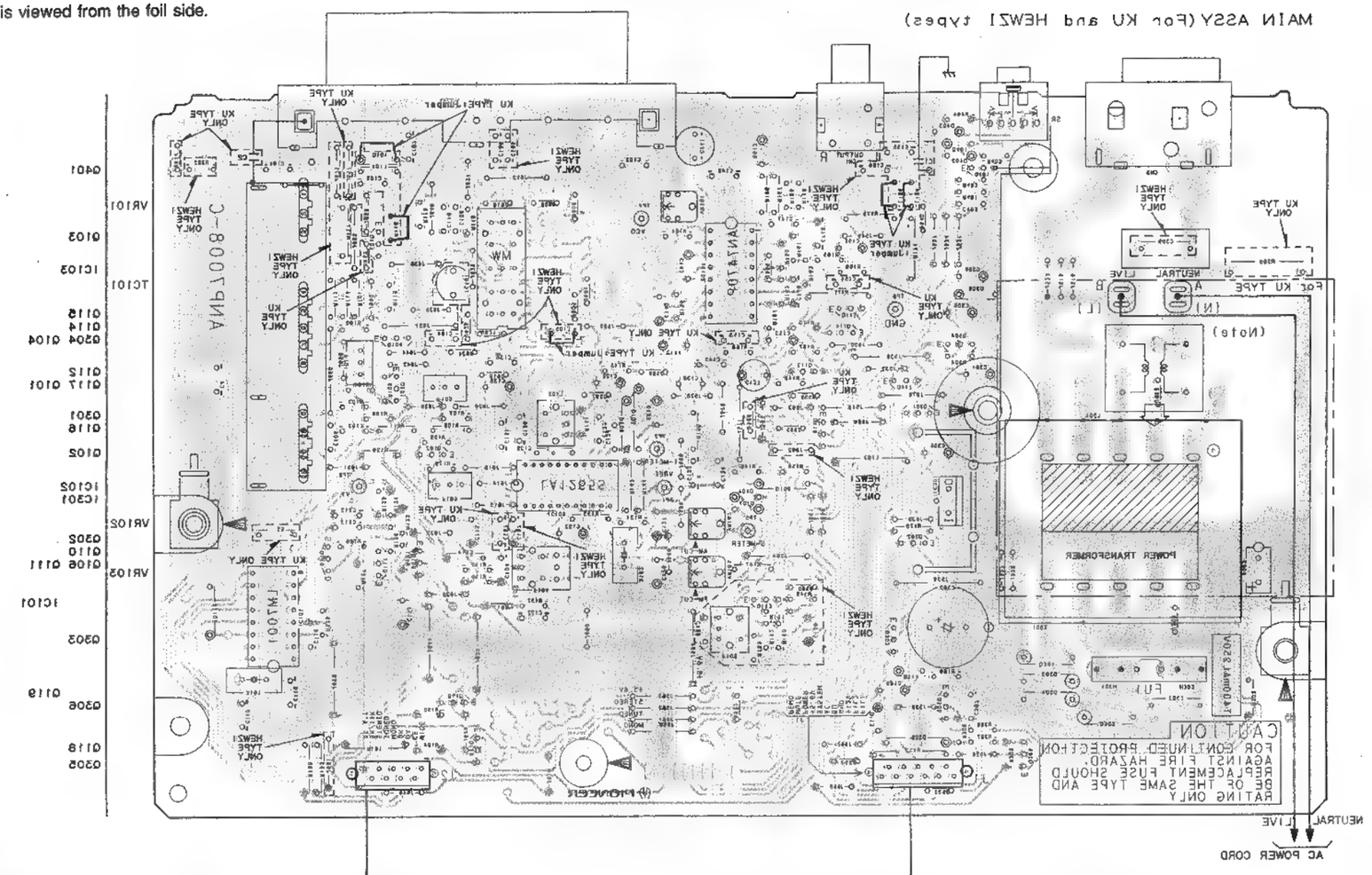


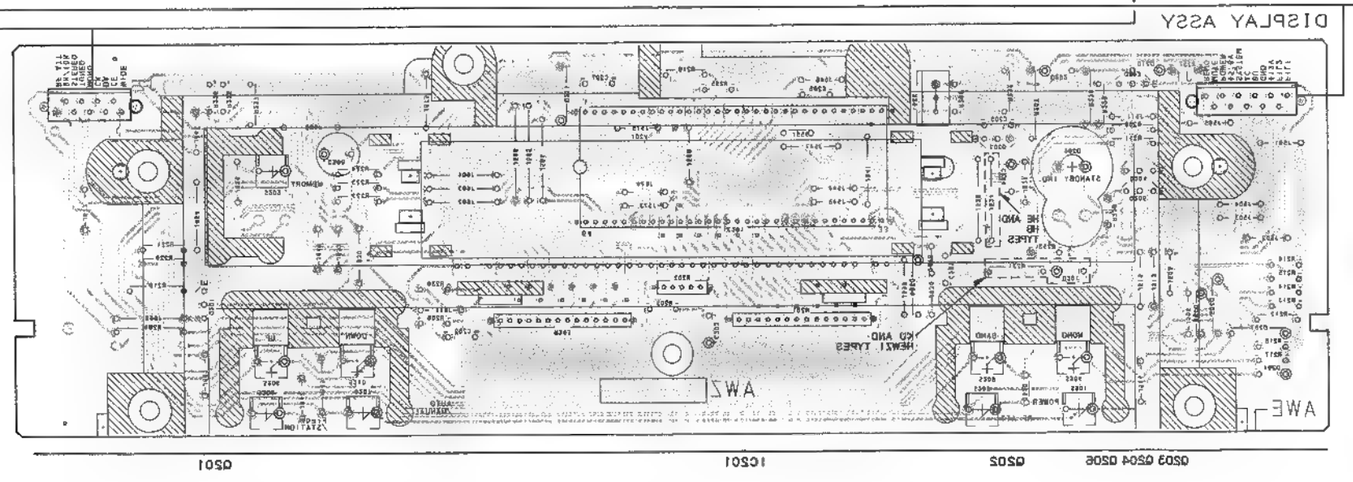
MAIN ASSY (For HE and HB types)

This PCB connection diagram is viewed from the foil side.

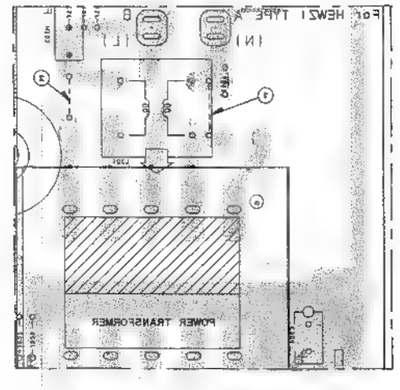
This PCB connection diagram is viewed from the foil side.



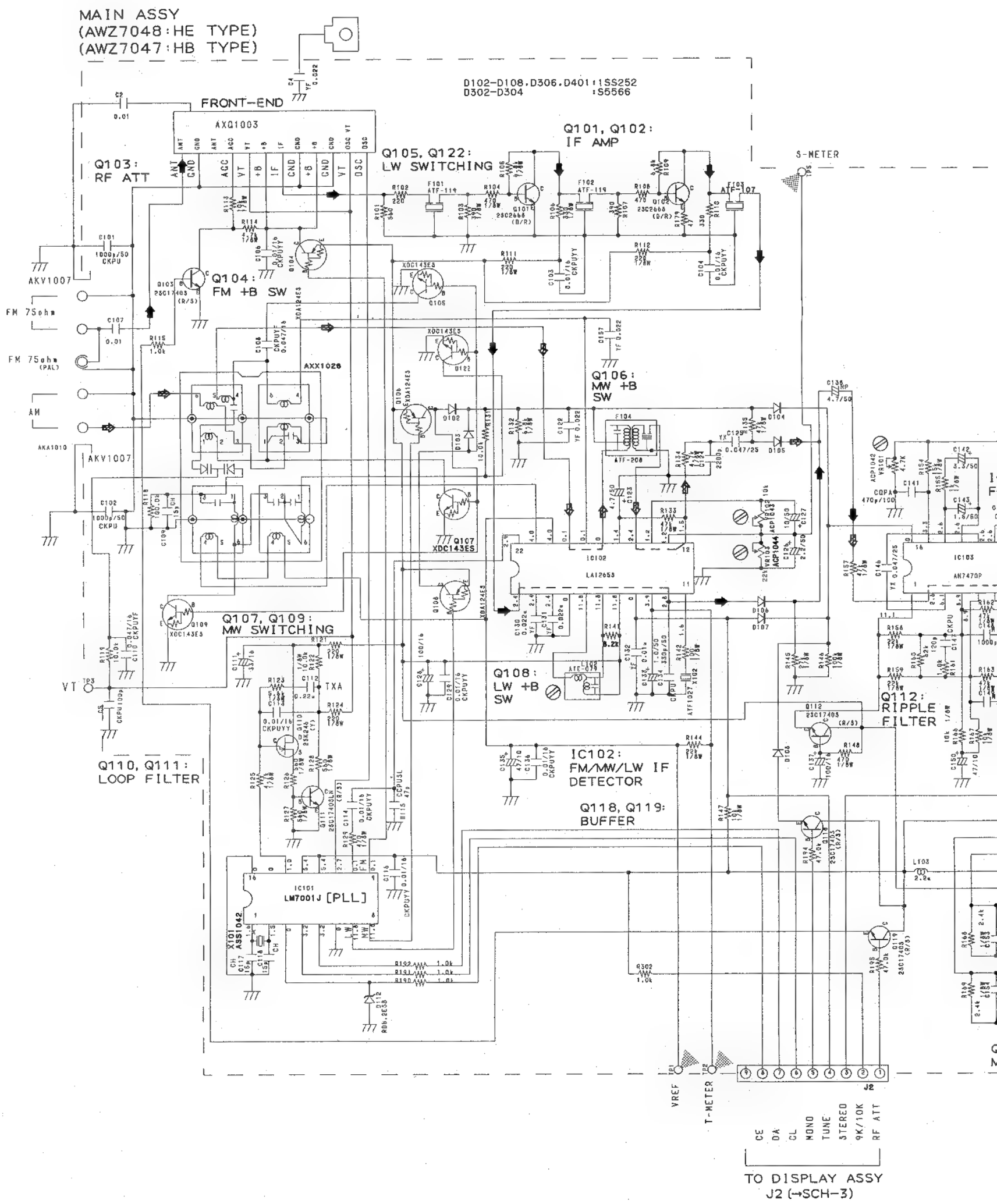




Note:For HEW2I type,PCB diagram is changed into the following:



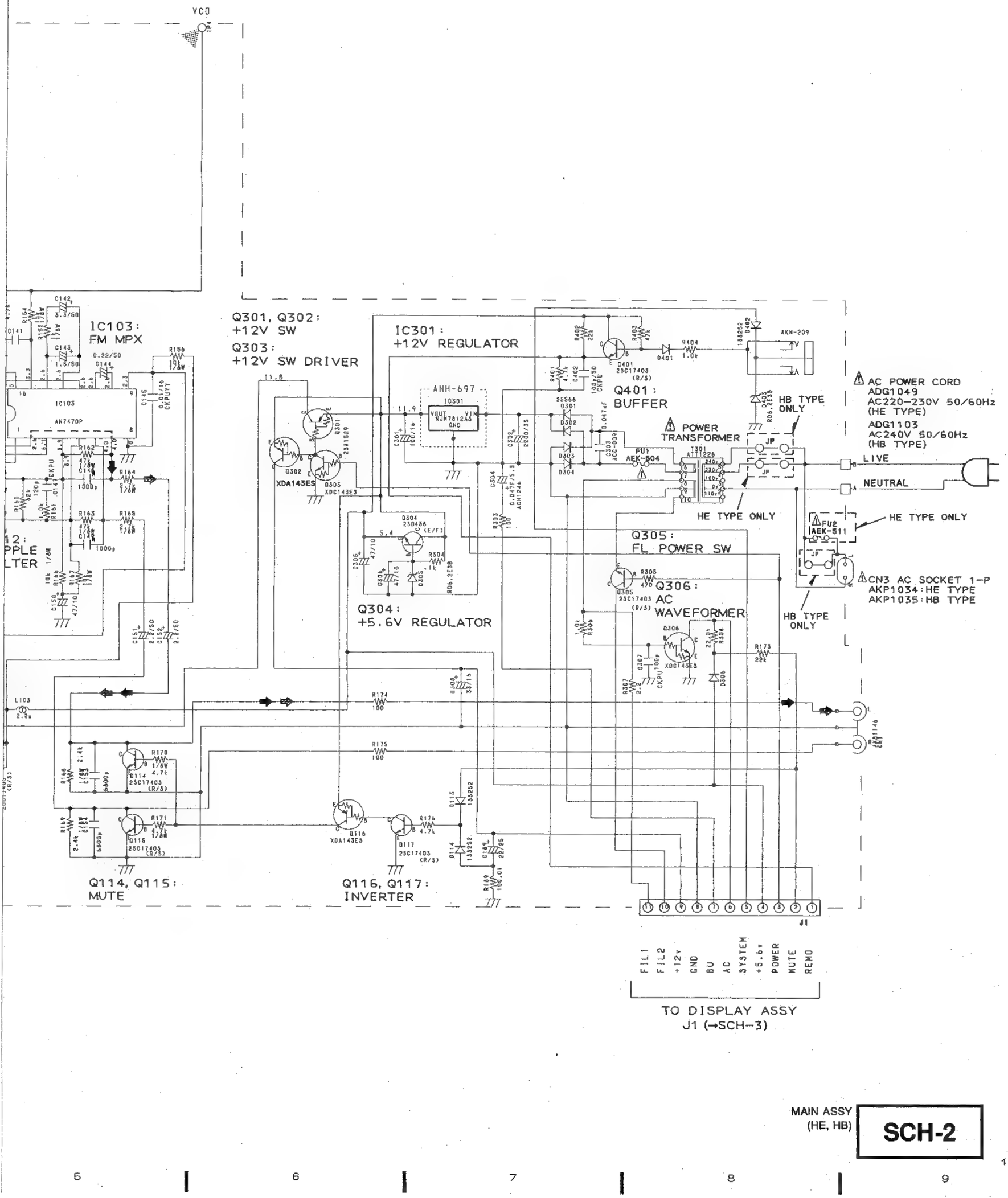
3.2 MAIN ASSY (For HE and HB types)



SCH-2 MAIN ASSY (HE, HB)

SCH-2

➡:FM Signal route
➪:LW/MW Signal route

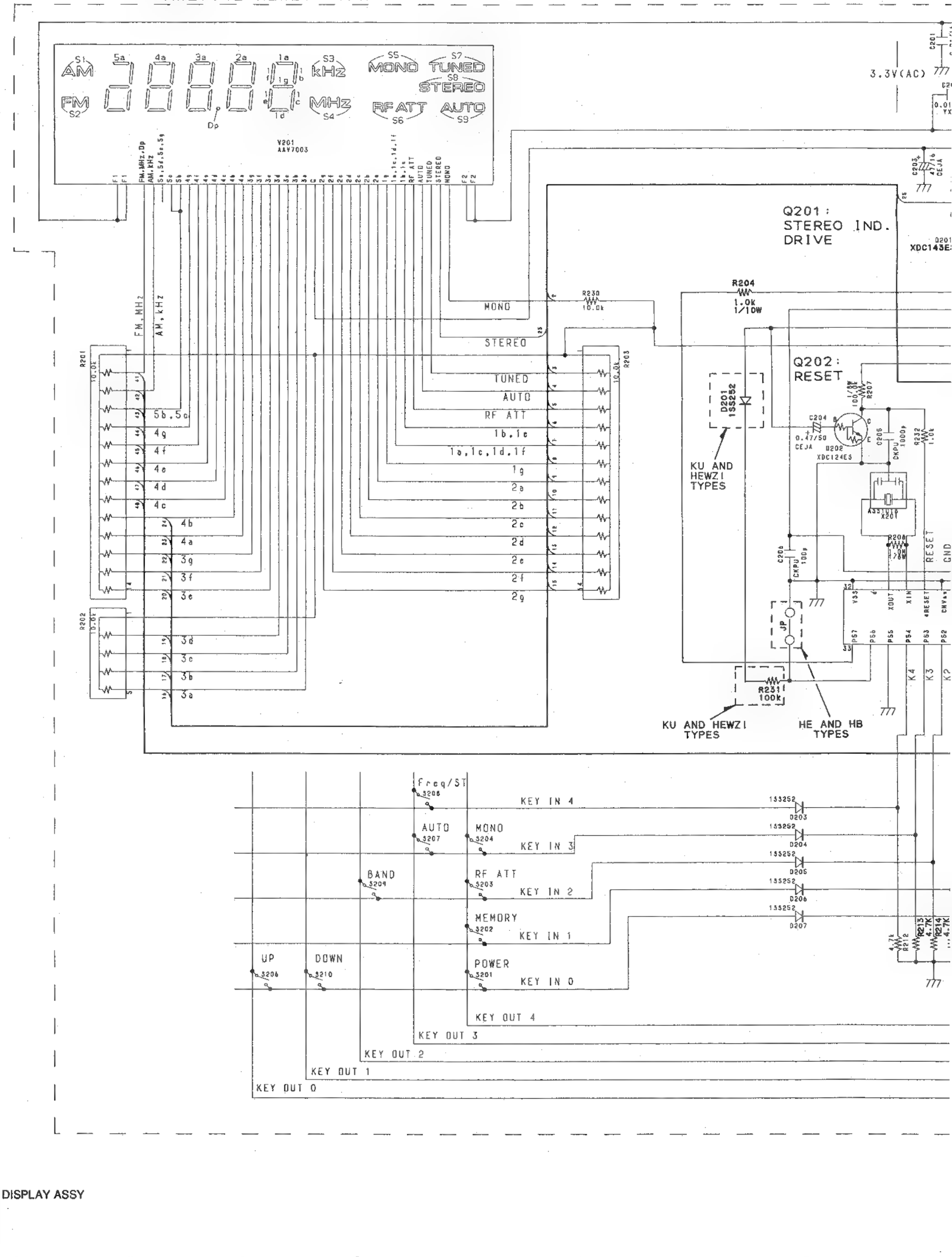


MAIN ASSY
(HE, HB)

SCH-2

ISPLAY ASSY

DISPLAY ASSY(AWZ7043:KU TYPE)
(AWZ7041:HE AND HB TYPES)
(AWZ7042:HEWZ1 TYPE)



SCH-3 DISPLAY ASSY

TO MAIN ASSY J1
(→SCH-1) or (→SCH-2)

TO MAIN ASSY J2
(→SCH-1) or (→SCH-2)

J1: FIL1, FIL2, +12V, GND, Back up, AC, SYSTEM, +5.6V, POWER, MUTE, REMO IN

J2: AM W/N, CE, DA, CL, MONO, TUNED, STEREO, 9k/10k, RF ATT

3.3V(AC)

11.6V

Q206: IND. DRIVE

STAND-BY IND.

Q201: STEREO IND. DRIVE

Q201 XDC143ES

Q204 XDC143ES

Q206 2SC1740S (R/S)

Q202: RESET

Q202 XDC124ES

Q203: BUFFER

Q203 2SC1740S (R/S)

IC201 PD5237B

RESET

GND

AC

POWER

REMO IN

MUTE

TUNE IN

RF ATT

AUTO

TUNED

MONO

STEREO

+B

HE AND HB TYPES

A(41:48)

A(2:25)

DISPLAY ASSY

SCH-3

4. PCB PARTS LIST

(For F−C3/KU and HE)

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω →	*56×10¹* → *561*	.....	*RD1/8PM 5 6 1 J*
47kΩ →	*47×10³* → *473*	.....	*RD1/4PS 4 7 3 J*
0.5Ω →	*0R5*	.....	*RN2H 0 R 5 K*
1Ω →	*010*	.....	*RS1P 0 1 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ→	*562×10¹* → *5621*	.....	*RN1/4PC 5 6 2 1 F*

Mark	No.	Description	Parts No.	Mark

LIST OF ASSEMBLIES

TUNER ASSEMBLY (For HE type)		AWE7002
├— DISPLAY ASSEMBLY		AWZ7041
└— MAIN ASSEMBLY		AWZ7048
TUNER ASSEMBLY (For KU type)		AWE7004
├— DISPLAY ASSEMBLY		AWZ7043
└— MAIN ASSEMBLY		AWZ7050

DISPLAY ASSEMBLY (For KU and HE types)

SEMICONDUCTORS

IC201		PD5237B
Q203,Q206		2SC1740S
Q202		XDC124ES
Q201,Q204		XDC143ES
D201−D207,D210,D211		1SS252
D208		AEL1148

SWITCHES AND RELAYS

S201−S204,S206−S210		ASG1034

CAPACITORS

C208		CEJA221M6
C203		CEJA470M16
C204		CEJAR47M50
C202		CKDYX103M25
C207		CKDYX473M25
C206		CKPUYB101K50
C205		CKPUYB102K50
C201		CKPUYY103M16

RESISTORS

R201,R203		RA13T103J
R202		RA4T103J
	Other Resistors	RD1/8PM□□□J

OTHERS

X201	(4.19MHz)	ASS1018
V201	FL TUBE	AAV7003

MAIN ASSEMBLY (For HE type)

SEMICONDUCTORS

IC103		AN7470P
IC102		LA1265S
IC101		LM7001J
IC301		NJM7812AS
Q301		2SA1529
Q103,Q112,Q114,Q115		2SC1740S
Q117−Q119,Q305,Q401		2SC1740S
Q111		2SC1740SLN
Q101,Q102		2SC2668
Q304		2SD438
Q110		2SK246
Q104,Q106,Q108		XDA124ES
Q116,Q302		XDA143ES
Q105,Q107,Q109,Q122,Q303		XDC143ES
Q306		XDC143ES
D102−D108,D113,D114,D306		1SS252
D401,D402		1SS252
D112,D305,D403		RD6.2ESB
D301−D304		S5566

COILS AND FILTERS

L102		ATE−079
F101,F102		ATF−119
F103		ATF−107
F104		ATF−208
L103		LAU2R2K

TRANSFORMERS

⚠	T301	(6.5VA)	ATT1226

CAPACITORS

C303	(0.047/AC25V)	ACG−009
C304	(47000/5.5)	ACH1246
C109,C117,C118		CCDCH150J50
C115		CCPUSL470J50
C138		CEANP4R7M50
C133		CEAS010M50
C127		CEAS100M50
C128,C137,C301		CEAS101M16
C143		CEAS1R5M50
C189		CEAS220M25
C302		CEAS222M35

Mark	No.	Description	Parts No.	Mark
	C126,C151,C152		CEAS2R2M50	
	C111		CEAS330M16	
	C142		CEAS3R3M50	
	C135,C150,C305,C306		CEAS470M10	
	C123		CEAS4R7M50	
	C144		CEASR22M50	
	C308		CEHAQ330M16	
	C112		CFTXA224J50	
	C107,C2		CKDYB103K50	
	C124		CKDYB222K50	
	C153,C154		CKDYB682K50	
	C132		CKDYF103Z50	
	C122,C130,C131,C157,C4		CKDYF223Z50	
	C125,C146		CKDYX473M25	
	C307,C402,C5		CKPUYB101K50	
	C101,C102		CKPUYB102K50	
	C147		CKPUYB121K50	
	C134		CKPUYB331K50	
	C108,C110		CKPUYF473Z16	
	C103,C104,C106,C113,C114		CKPUYY103M16	
	C116,C129,C136,C145		CKPUYY103M16	
	C148,C149		CQMA102J50	
	C141		CQPA471J100	
RESISTORS				
	VR101	(4.7k)	ACP1042	
	VR102	(10k)	ACP1043	
	VR103	(22k)	ACP1044	
		Other Resistors	RD1/8PM□□□J	
OTHERS				
	X101	(7.200MHz)	ASS1042	
	X102	(450kHz)	ATF1027	
		SCREW	ABA1012	
		ANTENNA TERMINAL 4−P	AKA1010	
		PIN JACK(2P)	AKB1146	
		JACK	AKN−209	
⚠		AC SOCKET 1−P	AKP1034	
		AM RF TUNING BLOCK	AXX1026	
		3−serial F.E.module assembly	AXQ1003	

Note:
3−serial F.E.module assembly has no service part.

MAIN ASSEMBLY (For KU type)

Mark	No.	Description	Parts No.	Mark
SEMICONDUCTORS				
	IC103		AN7470P	
	IC102		LA1265S	
	IC101		LM7001J	
	IC301		NJM7812AS	
	Q301		2SA1529	
	Q103,Q112,Q114,Q115		2SC1740S	
	Q117−Q119,Q305,Q401		2SC1740S	
	Q111		2SC1740SLN	
	Q101,Q102		2SC2668	
	Q304		2SD438	
	Q110		2SK246	
	Q104,Q106		XDA124ES	
	Q116,Q302		XDA143ES	
	Q303,Q306		XDC143ES	
	D104−D108,D113,D114,D306		1SS252	
	D401,D402		1SS252	
	D112,D305,D403		RD6.2ESB	
	D301−D304		SS566	
COILS AND FILTERS				
	L102		ATE−079	
	F103		ATF−107	
	F101,F102		ATF−119	
⚠	L301		ATF−163	
	F104		ATF−208	
	L103		LAU2R2K	
TRANSFORMERS				
⚠	T301	(6.5VA)	ATT1226	
CAPACITORS				
	C303	(0.047/AC25V)	ACG−009	
	C304	(47000/5.5)	ACH1246	
	C109,C117,C118		CCDCH150J50	
	C115		CCPUSL470J50	
	C138		CEANP4R7M50	
	C133		CEAS010M50	
	C127		CEAS100M50	
	C128,C137,C301		CEAS101M16	
	C143		CEAS1R5M50	
	C189		CEAS220M25	
	C302		CEAS222M35	
	C126,C151,C152		CEAS2R2M50	
	C111		CEAS330M16	
	C142		CEAS3R3M50	
	C135,C150,C305,C306		CEAS470M10	
	C123		CEAS4R7M50	
	C144		CEASR22M50	
	C308		CEHAQ330M16	
	C112		CFTXA224J50	
	C107,C2		CKDYB103K50	
	C124		CKDYB222K50	
	C132		CKDYF103Z50	
	C122,C130,C131,C157,C4		CKDYF223Z50	
	C153,C154		CKDYX103M25	
	C125,C146		CKDYX473M25	
	C307,C402,C5		CKPUYB101K50	
	C101,C102		CKPUYB102K50	
	C147		CKPUYB121K50	
	C134		CKPUYB331K50	
	C110		CKPUYF473Z16	
	C103,C104,C106,C113,C114		CKPUYY103M16	
	C116,C129,C136,C145		CKPUYY103M16	
	C148,C149		CQMA102J50	
	C141		CQPA471J100	
RESISTORS				
⚠	R309	(2.2M,1/2W)	ACN−208	
	VR101	(4.7k)	ACP1042	
	VR102	(10k)	ACP1043	
	VR103	(22k)	ACP1044	
		Other Resistors	RD1/8PM□□□J	
OTHERS				
	X101	(7.200MHz)	ASS1042	
	X102	(450kHz)	ATF1027	
		SCREW	ABA1012	
		ANTENNA TERMINAL 4−P	AKA1009	
		PIN JACK(2P)	AKB1146	
		JACK	AKN−209	
⚠		AC SOCKET 1−P	AKP1078	
		AM RF TUNING BLOCK	AXX1025	
		3−serial F.E.module assembly	AXQ1003	

Note:
3−serial F.E.module assembly has no service part.

5. ADJUSTMENTS

ADJUSTMENT OF THE FM TUNER SECTION

- Set the mode selector to FM BAND.
- Connect the wiring as shown in the Fig. 1.

Step No.	Adjustment Title	FM SG(1kHz, ±75kHz dev.)		Reception Frequency Display	Adjustment	
		Frequency(MHz)	Level(dBμV)		Adjustment Location	Specifications
1	Center adjustment	98	60	98.0MHz	L102	Adjust so that the DC voltage between the TP1(VREF) and TP2(T—METER) becomes 0V±50mV.
2	VCO adjustment	Non modulation	60	98.0MHz	VR101	Adjust so that the output of the TP4 (VCO) becomes 76kHz ±0.5kHz.
3	TUNED IND. Lighting level	98	24 (±3dB)	98.0MHz	VR103	Adjust so that the indicators of TUND IND. start to light up.

ADJUSTMENT OF MW TUNER SECTION

- Set the mode selector to AM(MW) BAND.
- Connect the wiring as shown in the Fig. 1.

Step No.	Adjustment Title	AM SG(400Hz, 30% Mod.)		Reception Frequency Display	Adjustment	
		Frequency(kHz)	Level(dBμV/m)		Adjustment Location	Specifications
1	Tracking adjustment *2	603	Low Input	603kHz	AM RF Tuning block antenna coil	Adjust so that the DC voltage between the TP5(S—METER) and GND becomes ■ maximum level.
2		1395		1395kHz	TC101	
3	IFT adjustment *2	603		603kHz	F104	
4	TUNED IND. Lighting level	999 *1	55 (±5dB)	999kHz *1	VR102	Adjust so that the indicator of TUNED IND. start to lights up.

Note1:

For the area using 10kHz step (KU type : 10kHz), frequencies should be as follows:

**1 : 1000kHz*

Note2:

*Adjustment marked with "*2" is only for HEWZI type.*

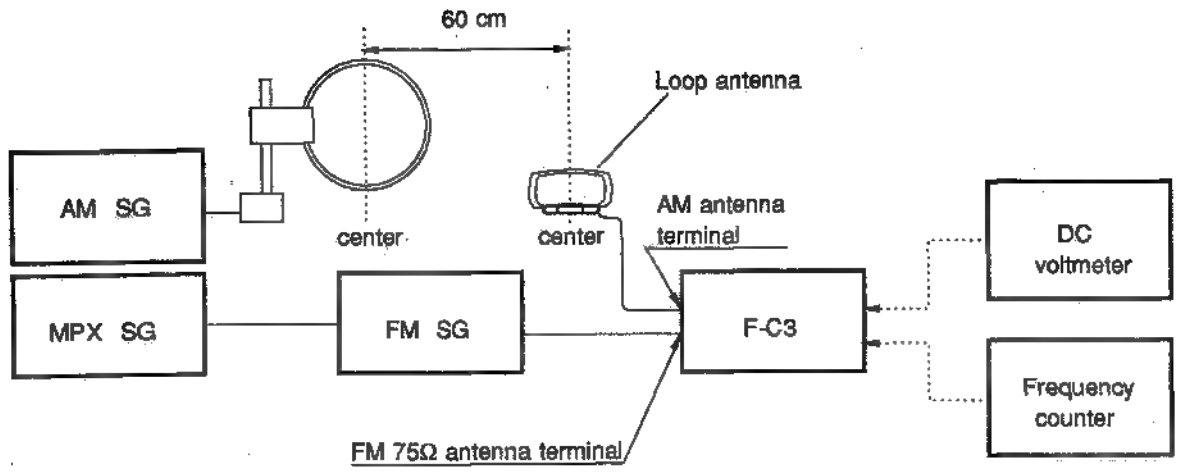
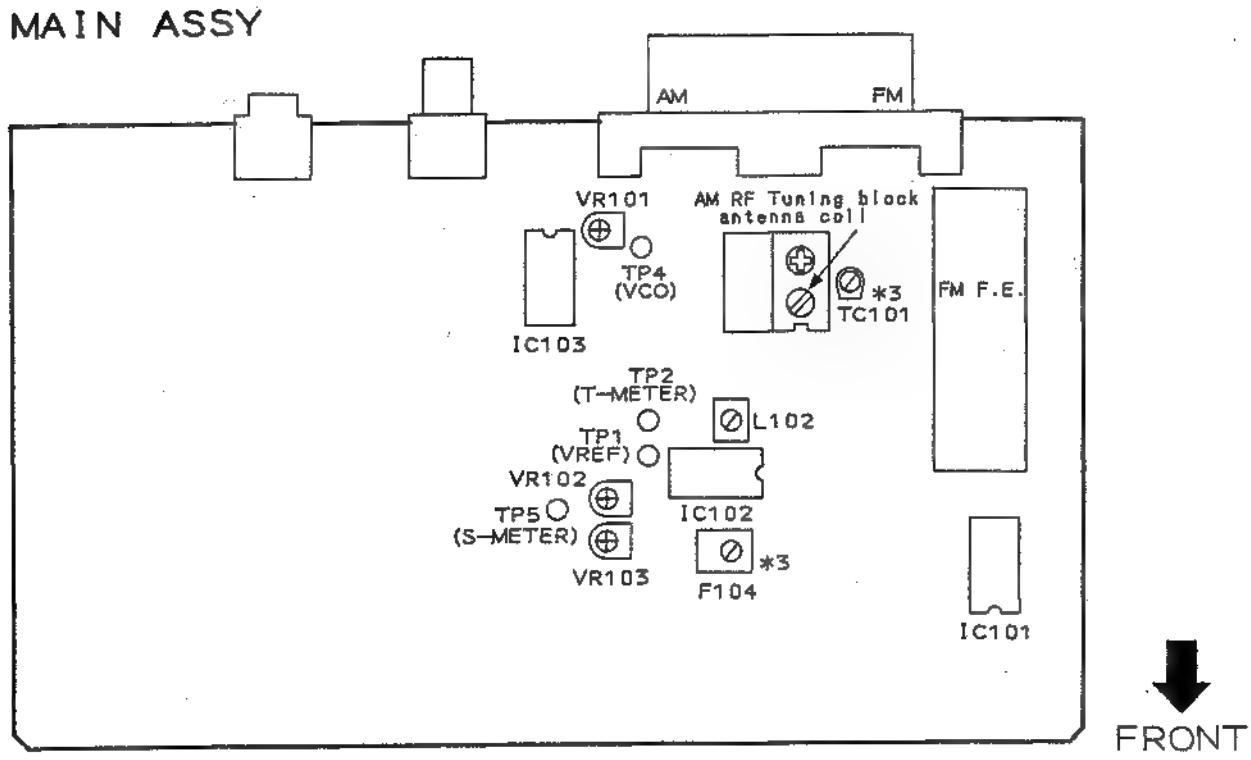


Fig. 1 AM and FM adjustment wiring diagram



**3 : HEWZI type only*

Fig. 2 Adjustment points

6. FOR HEWZI AND HB TYPES

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

6.1 CONTRAST OF MISCELLANEOUS PARTS FOR HEWZI TYPE

F-C3/HEWZI and F-C3/KU have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		F-C3/KU	F-C3/HEWZI	
	TUNER assembly	AWE7004	AWE7003	
	DISPLAY assembly	AWZ7043	AWZ7042	
	MAIN assembly	AWZ7050	AWZ7049	
	Screw (STEEL)	.....	ABA1047	Refer to P.5
⚠	AC power cord	ADG1058	ADG1049	
	FM antenna	ADH1005	ADH1002	
⚠	FU1 Fuse (500mA/125V)	AEK−136	.....	
⚠	FU1 Fuse (T400mA/250V)	.....	AEK−504	
	Cord stopper	AEP−113	AEC−882	
	Packing case	AHD7015	AHD7014	
	Sub panel	AMB7073	AMB7029	
	Front panel	AMB7079	AMB7027	
	Rear panel	ANC7060	ANC7057	
	Operating instructions (English)	ARB7005	.....	
	Operating instructions (German/Italian)	.....	ARC7005	
NSP	PCB post	.....	DEC1390	
	65 label	ORW1069	.....	

MAIN ASSEMBLY

AWZ7049 and AWZ7050 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7050	AWZ7049	
	FE module assembly (3L)	AXQ1003	.....	
	FE module assembly (4L)	.....	AXQ1004	
	AM RF tuning block (MW)	AXX1025	AXX1027	
	D101	.....	1SV156	
	Q113	.....	2SC1740S	
	R116	.....	RD1/8PM270J	
	R117	.....	RD1/2PM681J	
	R149	.....	RD1/8PM224J	
	R150	.....	RD1/8PM473J	
	R151	.....	RD1/8PM222J	
	R152	.....	RD1/8PM152J	

Mark	Symbol & Description	Part No.		Remarks
		AWZ7050	AWZ7049	
	R153	·····	RD1/8PM392J	
	R160	RD1/8PM623J	RD1/8PM473J	
	R168,R169	RD1/8PM242J	RD1/8PM912J	
	R302	·····	RD1/8PM102J	
⚠	R309	ACN−208	·····	
	C1	·····	CKDYX103M25	
	C2	CKDYB103K50	·····	
	C5	CKPUYB101K50	·····	
	C105	·····	CKDYB103K50	
	C110	CKPUYF473Z16	CKDYX473M25	
	C139	·····	CKDYB122K50	
	C140	·····	CEAS4R7M50	
	C153,C154	CKDYX103M25	·····	
	C155,C156	·····	CKDYB332K50	
	C157	CKDYF223Z50	·····	
	C184	·····	CKPUYF223Z25	
	C185	·····	CKPUYB101K50	
	C186	·····	CKPUYB102K50	
	C187	·····	CCPUSL270J50	
⚠	C309	·····	ACG1002	
	TC101	·····	ACM−018	
	F105	·····	ATF1088	
	L101	·····	LAU2R2J	
	L104,L106	·····	LAU2R2K	
	L105	·····	LAU330J	
	L301	ATF−163	ATF1135	
	Antenna terminal 4−P	AKA1009	·····	
	Antenna terminal PAL 2−P	·····	AKA1012	
⚠	CN3 AC socket 1−P	AKP1078	AKP1034	

DISPLAY ASSEMBLY
Although AWZ7042 and AWZ7043 are different in part number, they consist of the same components.

6.2 CONTRAST OF MISCELLANEOUS PARTS FOR HB TYPE

F-C3/HB and F-C3/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		F-C3/HE	F-C3/HB	
	TUNER assembly	AWE7002	AWE7001	
	MAIN assembly	AWZ7048	AWZ7047	

Mark	Symbol & Description	Part No.		Remarks
		F-C3/HE	F-C3/HB	
⚠	AC power cord	ADG1049	ADG1103	
	Binder	.....	AEC−093	Refer to P.5
⚠	FU2 Fuse (T2A/250V)	AEK−511	.....	
	Rear panel	ANC7058	ANC7059	
	Operating instructions (English/German/French/Italian/ Swedish/Spanish/Dutch/Portuguese)	ARE7010	.....	
	Operating instructions (English)	.....	ARB7005	
	Sub operating instructions (English/German/French/Italian/ Swedish/Spanish/Dutch/Portuguese)	ARH7003	.....	

MAIN ASSEMBLY
AWZ7047 and AWZ7048 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7048	AWZ7047	
⚠	CN3 AC socket 1−P	AKP1034	AKP1035	

7. SPECIFICATIONS

FM Tuner Section

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity (IHF) ..... 12.7 dBf (1.2 µV/75 Ω)
50 dB Quieting Sensitivity ..... Mono; 18 dBf (2.2 µV/75 Ω)
Stereo; 38.3 dBf (22.6 µV/75 Ω)
Sensitivity (DIN) ..... Mono; 1.0 µV/75 Ω
Stereo; 35 µV/75 Ω
Signal-to-Noise Ratio ..... Mono; 78 dB (at 85 dBf)
Stereo; 74 dB (at 85 dBf)
Signal-to-Noise Ratio (DIN) ..... Mono; 62 dB
Stereo; 60 dB
Distortion ..... 0.3 % (1 kHz)
Alternate Channel Selectivity ..... 60 dB (300 kHz)
Stereo Separation ..... 40 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz ±1 dB
Image Response Ratio ..... 50 dB
IF Response Ratio ..... 90 dB
Antenna Input ..... 75 Ω unbalanced
Output ..... 650 mV (100 % MOD.)

MW (AM) Tuner Section

Frequency range
U.S. model ..... 530 kHz to 1,700 kHz (Step 10 kHz)
U.K. model ..... 531 kHz to 1,602 kHz (Step ■ kHz)
Sensitivity (IHF, Loop antenna) ..... 350 µV/m
Selectivity ..... 20 dB
Signal-to Noise Ratio ..... 50 dB
Antenna ..... Loop Antenna
Output ..... 150 mV (30 % MOD.)

LW Tuner Section (U.K. model only)

Frequency range ..... 153 kHz to 281 kHz
Sensitivity (IHF, Loop antenna) ..... 1,500 µV/m
Selectivity ..... 20 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop Antenna
Output ..... 158 mV (30 % MOD.)

Miscellaneous

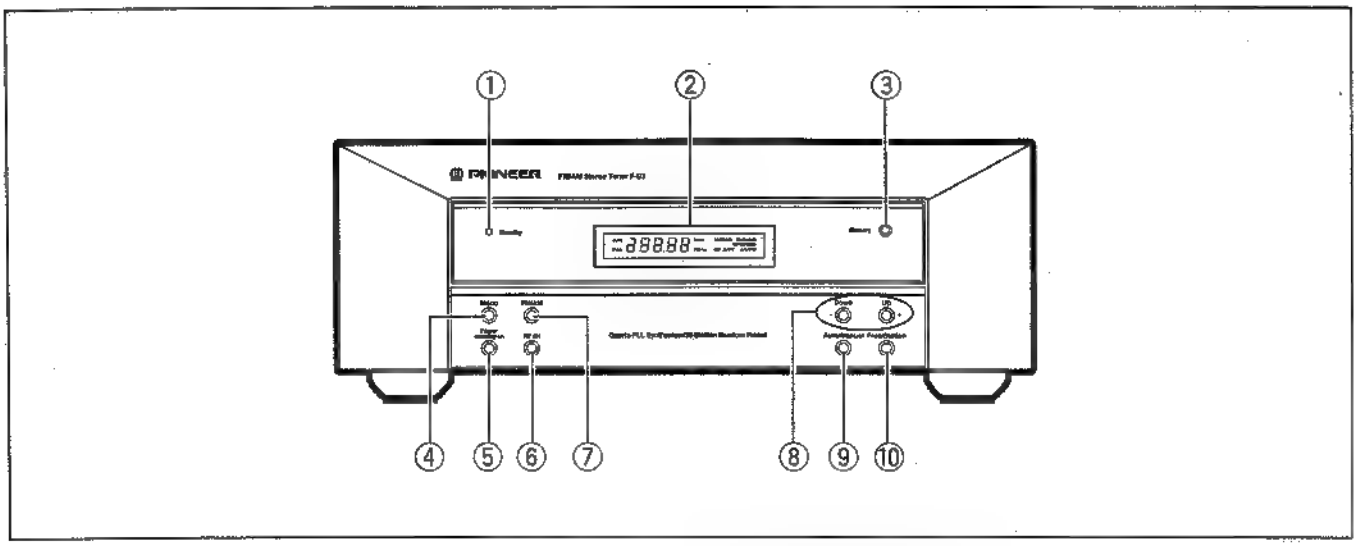
Power Requirements
U.S. model ..... AC 120 V, 60 Hz
U.K. model ..... AC 240 Volts ~, 50/60 Hz
Power Consumption ..... 10 W
Dimensions ..... 260 (W) x 95.5 (H) x 336 (D) mm
10-1/4 (W) x 3-3/4 (H) ■ 13-3/16 (D) in
Weight (without package) ..... 2.3 kg (5 lb 1 oz)

Furnished Parts

FM T-type Antenna 1
AM Loop Antenna 1
Connecting Cord with Pin Plugs 1
Operating Instructions 1
Control cable 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

8. PANEL FACILITIES



① **Standby indicator**
Goes out when power is turned on; lights when power is set to standby.

② **Display section**

③ **Memory button**

④ **Mono button**

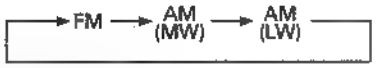
⑤ **Power standby/on switch**
This is the switch for electric power.

On: When set to the on position, power is supplied and the unit becomes operational.

Standby: When set to the standby position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.
When the Standby indicator lights, the unit is in STANDBY.

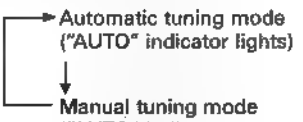
⑥ **RF Att button**
Press this RF attenuator button if the excessive strenght of FM signals results in distortion. The RF ATT indicator will light in the display section.
• This function does not operate during AM broadcasts.

⑦ **FM/AM button**
Each time you press the button, the changes as follows.



⑧ **Tuning Up+ Down– button**
Use to tune broadcast stations.

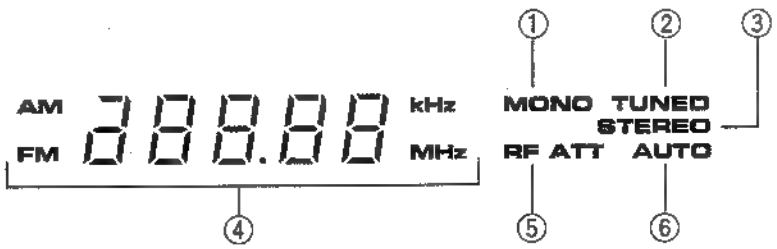
⑨ **Auto/Manual button**
When this button is pressed, the tuning function shanges alternately as follows:



• *Auto tuning is not possible on the LW band.*

⑩ **Frequency/Station button**

Display Section



① **Lights when the Mono button is set to ON.**
② **Lights when broadcast is received.**
③ **Lights during reception of stereo broadcast.**
④ **Displays the frequency or station.**
⑤ **Lights when RF attenuator function is on.**
⑥ **Lights during auto tuning mode.**

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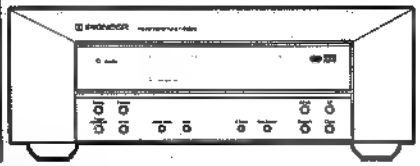
Service Manual



ORDER NO.
RRV1108

FM/AM DIGITAL SYNTHESIZER TUNER

F-C5RDS

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	The voltage can be converted by the following method.
	F-C5RDS		
HE	○	AC220—230V	AC240V, *
HB	○	AC240V	AC220—230V, *
HEWZI	○	AC220—230V	AC240V, *

* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

• For HB and HEWZI types, refer to page 30.

CONTENTS

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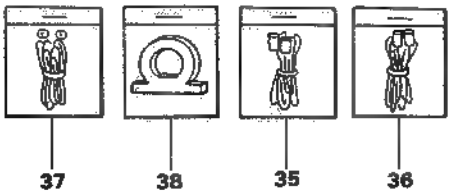
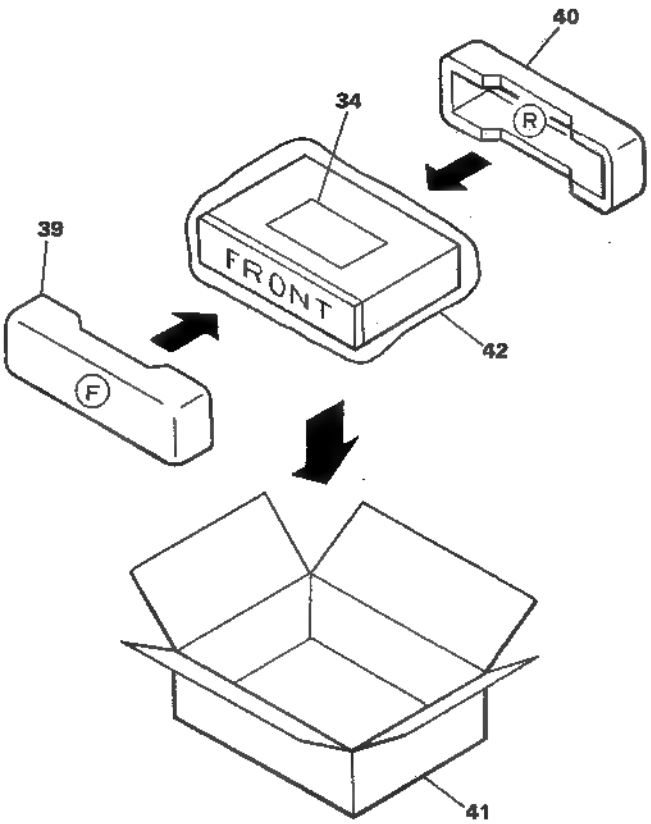
O-FFO MAY. 1994 Printed in Japan
4209

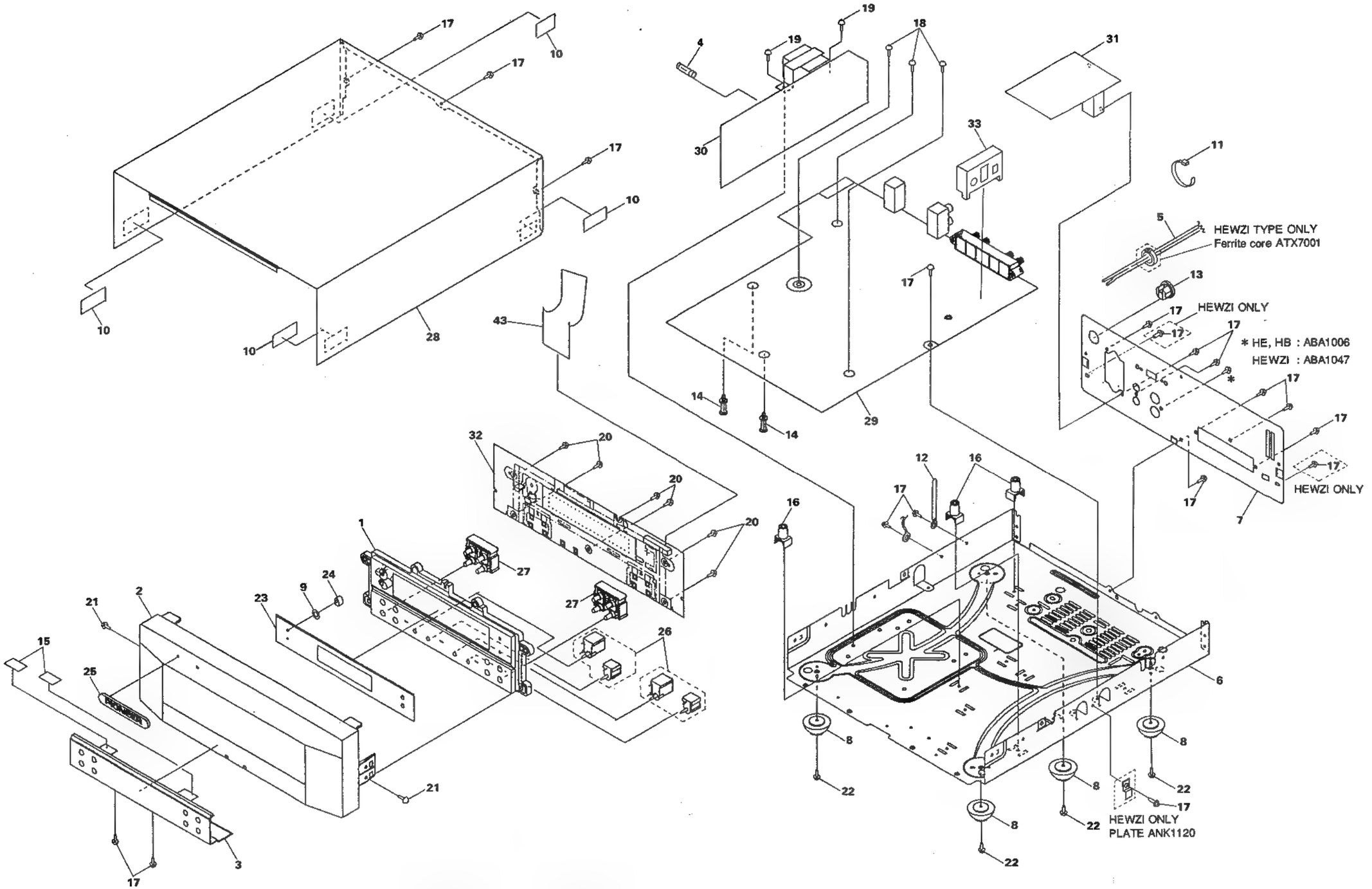
1. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Parts No.
	1	SUB PANEL	AMB7029
	2	FRONT PANEL	AMB7080
	3	FRONT PANEL	ANB7005
⚠	4	FU1 FUSE (2.5A,250V)	AEK−512
⚠	5	AC POWER CORD	ADG1049
NSP	6	CHASSIS	ANA7006
	7	REAR PANEL	ANC7095
	8	INSULATOR	PNW2363
	9	WASHER	ABE7001
	10	CUSHON GUM	AEB7004
	11	NYLON BINDER	AEC−093
	12	BINDER	AEC−826
⚠	13	STRAIN RELIEF	AEC−882
	14	PCB SPACER(3X12)	AEC1372
	15	SPACER (PVC)	AEC7007
NSP	16	PCB MOULD	AMR1525
	17	SCREW (STEEL)	ABA1006
	18	SCREW	ABA1018
	19	SCREW (STEEL)	ABA1048
	20	SCREW	BBZ26P100FMC
	21	SCREW	BBZ30P080FZK
	22	SCREW	BBZ30P100FZK
	23	DISPLAY PANEL	AAK7071
	24	LED LENS	PNW2019
	25	NAME PLATE (AL)	RAN1013
	26	BUTTON	AAD7052
	27	BUTTON	RAC1859
	28	BONNET	ANE7010
	29	TUNER ASSEMBLY	AWZ7272
	30	POWER ASSEMBLY	AWZ7275
	31	OUTLET ASSEMBLY	AWZ7279
	32	DISPLAY ASSEMBLY	AWP7001
	33	4 SERIAL F.E. MODULE ASSY	AXQ1004
	34	OPE. INSTRUCTIONS (English/French/German/Italian/ Swedish/Dutch/Spanish/ Portguese)	ARE7015
	35	PLUG CORD	ADE−052
	36	CORD WITH PLUG	ADE−085
	37	FM ANTENNA	ADH1005
	38	LOOP ANTENNA	ATB1011
	39	F.PAD	AHA7010
	40	R.PAD(PS)	AHA7011
	41	PACKING CASE	AHD7055
	42	PACKING SHEET	AHG1093
	43	FLEXIBLE CABLE	ADD1114

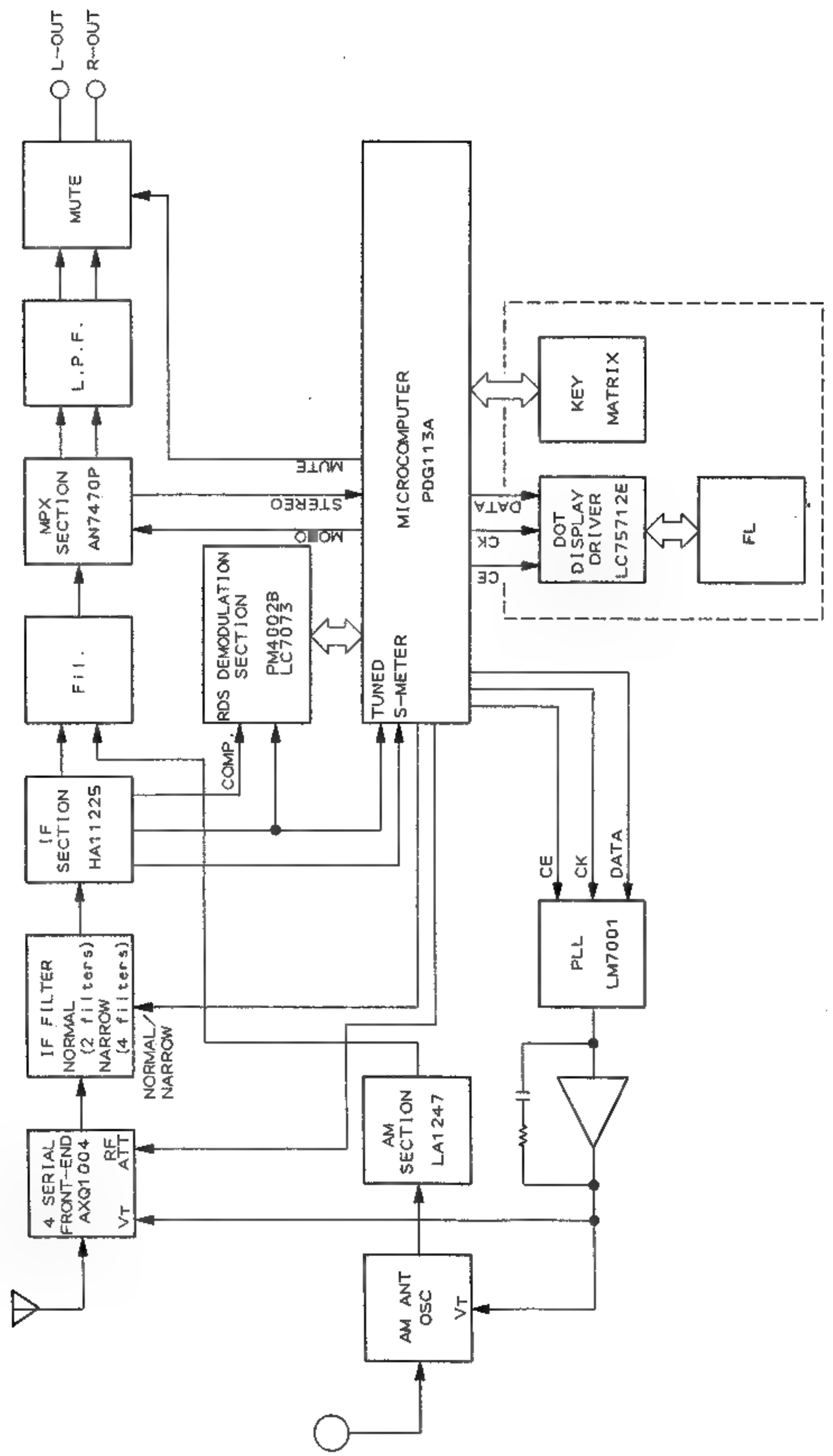






NOTE: Screws adjacent to ▼ mark on product are used for disassembly.

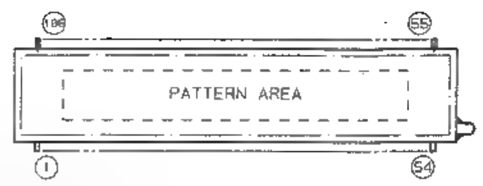
2. BLOCK DIAGRAM



3. FL INFORMATION

■ AAV7008 (V901)

PIN LOCATION



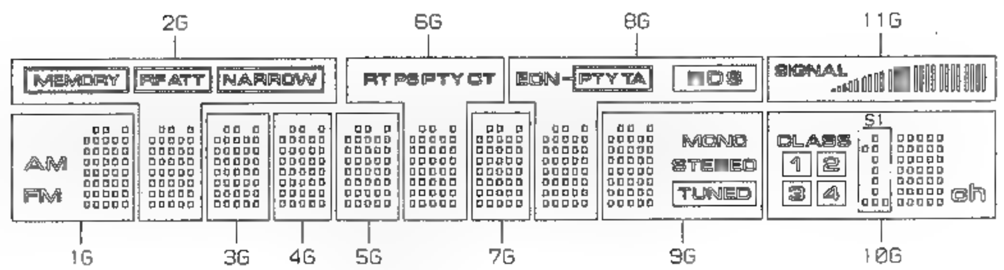
PIN CONNECTION

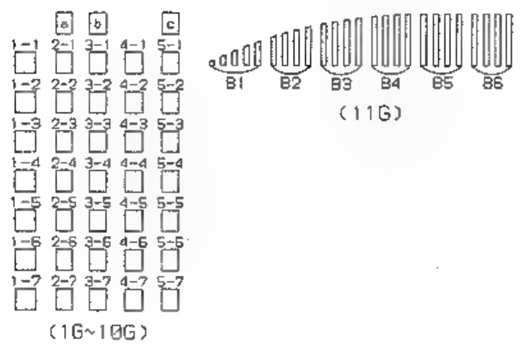
PIN NO.	CONNECTION
108	F1
107	F1
106	NP
105	NP
104	P42
103	P41
102	P40
101	P39
100	P38
99	P37
98	P36
97	P35
96	P34
95	P33
94	P32
93	P31
92	P30
91	P29
90	P28
89	P27
88	NX
87	NX
86	NX
85	NX
84	NX
83	NX
82	NX
81	NX
80	NX
79	NX
78	NX
77	NX
76	NX
75	NX
74	NX
73	IC
72	P13
71	P14
70	P15
69	P16
68	P17
67	P23
66	P24
65	P25
64	P26
63	P18
62	P19
61	P20
60	P21
59	P22
58	NP
57	NP
56	F2
55	F2

PIN NO.	CONNECTION
1	F1
2	F1
3	NP
4	NP
5	1G
6	2G
7	3G
8	4G
9	5G
10	6G
11	7G
12	8G
13	NC
14	NC
15	NC
16	NC
17	NC
18	NC
19	NC
20	NX
21	NX
22	NX
23	NX
24	NX
25	NX
26	NX
27	NX
28	NX
29	NX
30	NX
31	NX
32	NX
33	NX
34	NX
35	9G
36	10G
37	NC
38	P1
39	P2
40	P3
41	P4
42	P5
43	P6
44	P7
45	P8
46	P9
47	P10
48	P11
49	P12
50	11G
51	NP
52	NP
53	F2
54	F2

NOTE
1) F1,F2 --- Filament
2) NP ------ No pin
3) NX ------ No extend pin
4) DL ------ Datum Line
5) NC ------ No connection
6) 1G~11G --- Grid
7) IC ------ Internal connection
8) Pin50 and pin73 are connected inside.

GRID ASSIGNMENT





ANODE CONNECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G
P 1	-	-	-	-	-	CT	-	RDS	-	ch	B6
P 2	-	NARROW	-	-	-	PTY	-	TA	TUNED	S1	B5
P 3	FM	RF ATT	-	-	-	PS	-	PTY	STEREO	4	B4
P 4	AM	MEMORY	-	-	-	RT	-	EON-	MONO	3	B3
P 5	c	c	c	c	c	c	c	c	c	2	B2
P 6	b	b	b	b	b	b	b	b	b	1	B1
P 7	a	a	a	a	a	a	a	a	a	CLASS	SIGNAL
P 8	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	-
P 9	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	-
P10	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	-
P11	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	-
P12	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	-
P13	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	-
P14	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	-
P15	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	-
P16	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	-
P17	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	-
P18	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	-
P19	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	-
P20	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	-
P21	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	-
P22	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	-
P23	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	-
P24	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	-
P25	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	-
P26	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	-
P27	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	-
P28	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	-
P29	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	-
P30	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	-
P31	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	-
P32	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	-
P33	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	-
P34	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	-
P35	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	-
P36	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	-
P37	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	-
P38	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	-
P39	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	-
P40	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	-
P41	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	-
P42	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	-

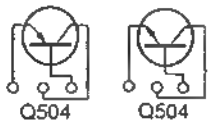
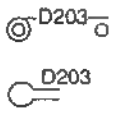
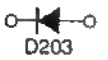
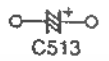
4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 3A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or µF unless otherwise noted.
   Ratings: capacitor (µF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or µH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   mV : Signal voltage at FM 1kHz, 100% MOD.
   or ← V :
   DC voltage (V) at no input signal unless otherwise noted.
   Value in ( ) is DC voltage at rated power.
   ⇦ mA or ← mA :
   DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◄ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH—□ ON THE SCHEMATIC DIAGRAM:**
   - SCH—□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):
   S901: POWER (STANDBY/ON)
   S902: RF Att
   S905: Class
   S906: FM/AM
   S911: Memory
   S916: Active mode
   S917: IF Band
   S921: EON
   S922: Mono
   S924: Freq/Station
   S925: Up
   S926: Down

NOTE FOR PCB DIAGRAMS:

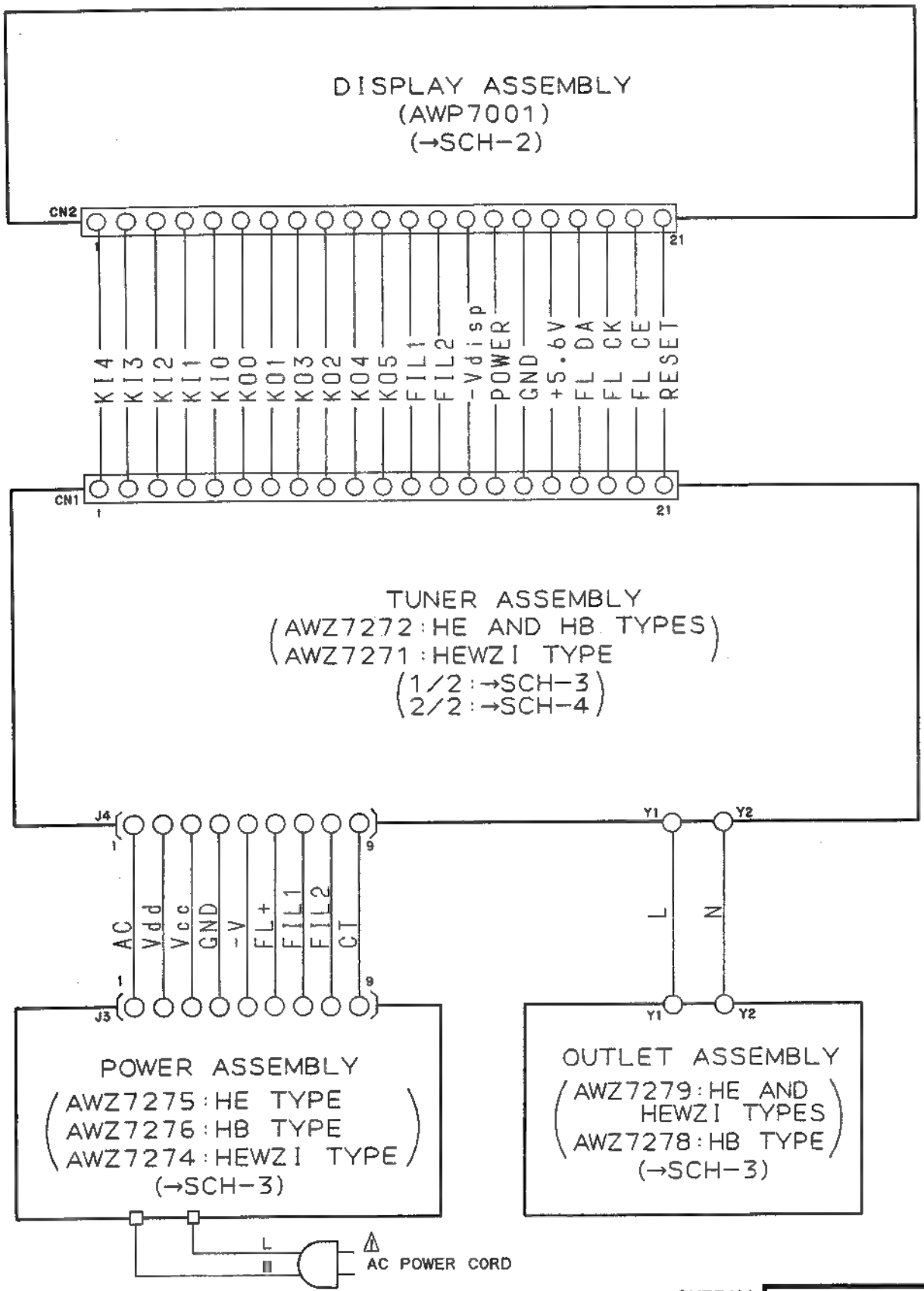
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Diode
		Capacitor (Polarized)

3. The transistor terminal marked with E or ⊏ shows the emitter.
4. The diode terminal marked with ◎ or ⊂ shows cathode side.
5. The capacitor terminal marked with ◎ or ⊏ shows negative terminal.

4.1 OVERALL WIRING DIAGRAM

SCH-1



OVERALL **SCH-1**

4.2 DISPLAY ASSEMBLY

- This diagram is viewed from the foil side.

PCB-1

DISPLAY ASSEMBLY

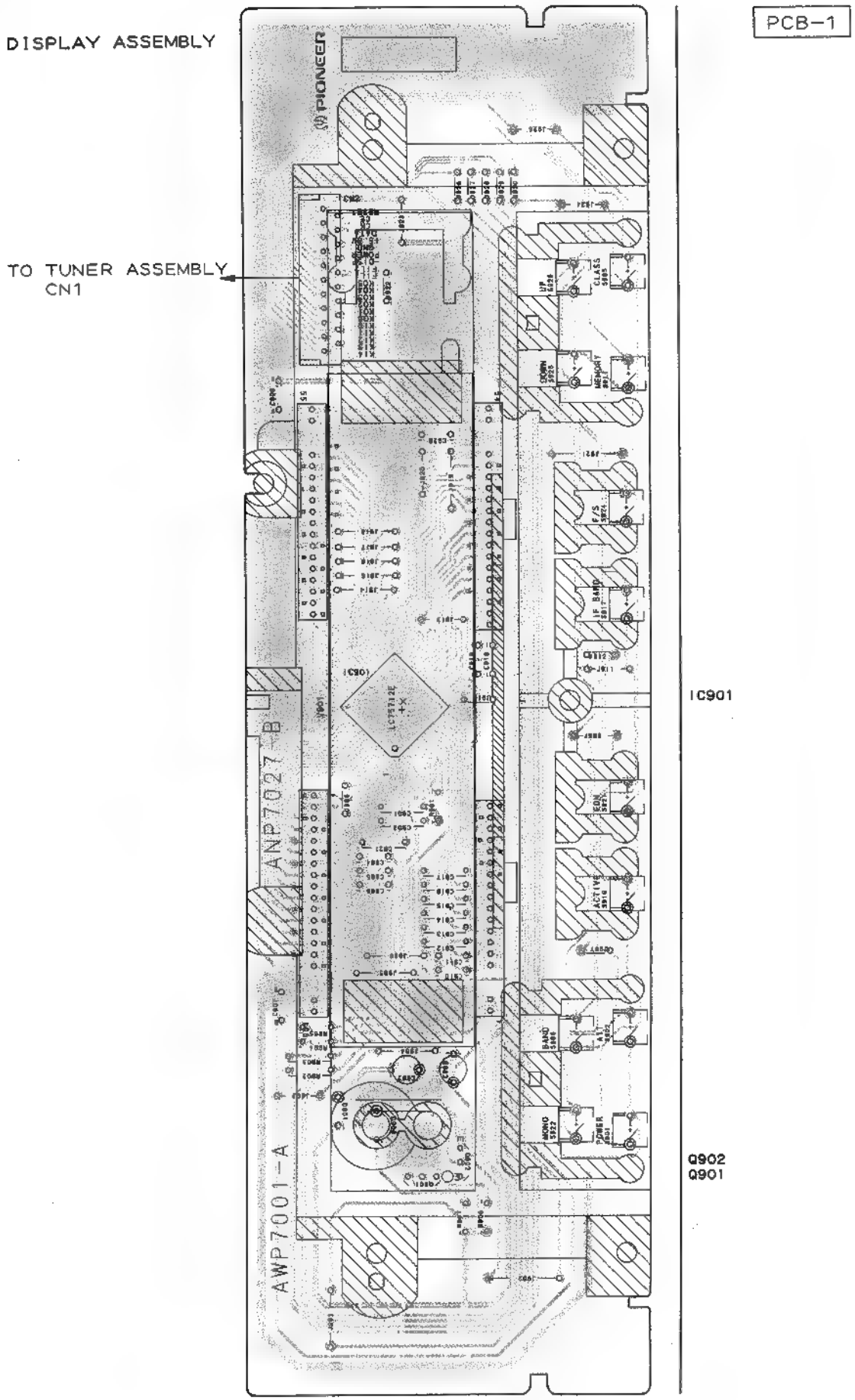
TO TUNER ASSEMBLY
CN1

IC901

Q902
Q901

4.2 DISPLAY ASSEMBLY

- This diagram is viewed from the mounted parts side.



TO TUNER ASSEMBLY (2/2) CN1 (→SCH-4)

DISPLAY ASSEMBLY (AWP7001)

CN2 AKP1006

KI4 KI3 KI2 KI1 KI0 KO0 KO1 KO2 KO3 KO4 KO5 FIL1 FIL2 -VDISP POWER GND +5.6V FL DATA FL CK FL CE RESET 21

POWER S901 BAND S906

ACTIVE S916 EON S921 FREQ/ST S924

RF ATT S902

IF BAND S917 MPX MODE S922 F/S UP S925

F/S DOWN S926

MEMORY S911

CLASS S905

Q902: INVERTER

R907 330

R906 4.7k

D908 AEC1148-A

Q909 2SC1740S

Q901 : XDC143E3 STANDBY IND. DRIVE

D901 1SS252

C921 0.01/16

C903 0.01/16

C901 30p

C902 100/10

R901 33.0k

R902 1.0k

R903 1.0k

R904 1.0k

R905 1.0k

C904 47p

C905 47p

C906 47p

C907 C908 C909 C910 C911 C912 C913 C914 C915 C916 100p

IC901 LC75712E

IC901 : FL DRIV

148 147 146 145 144 143 142 141 140 139 138

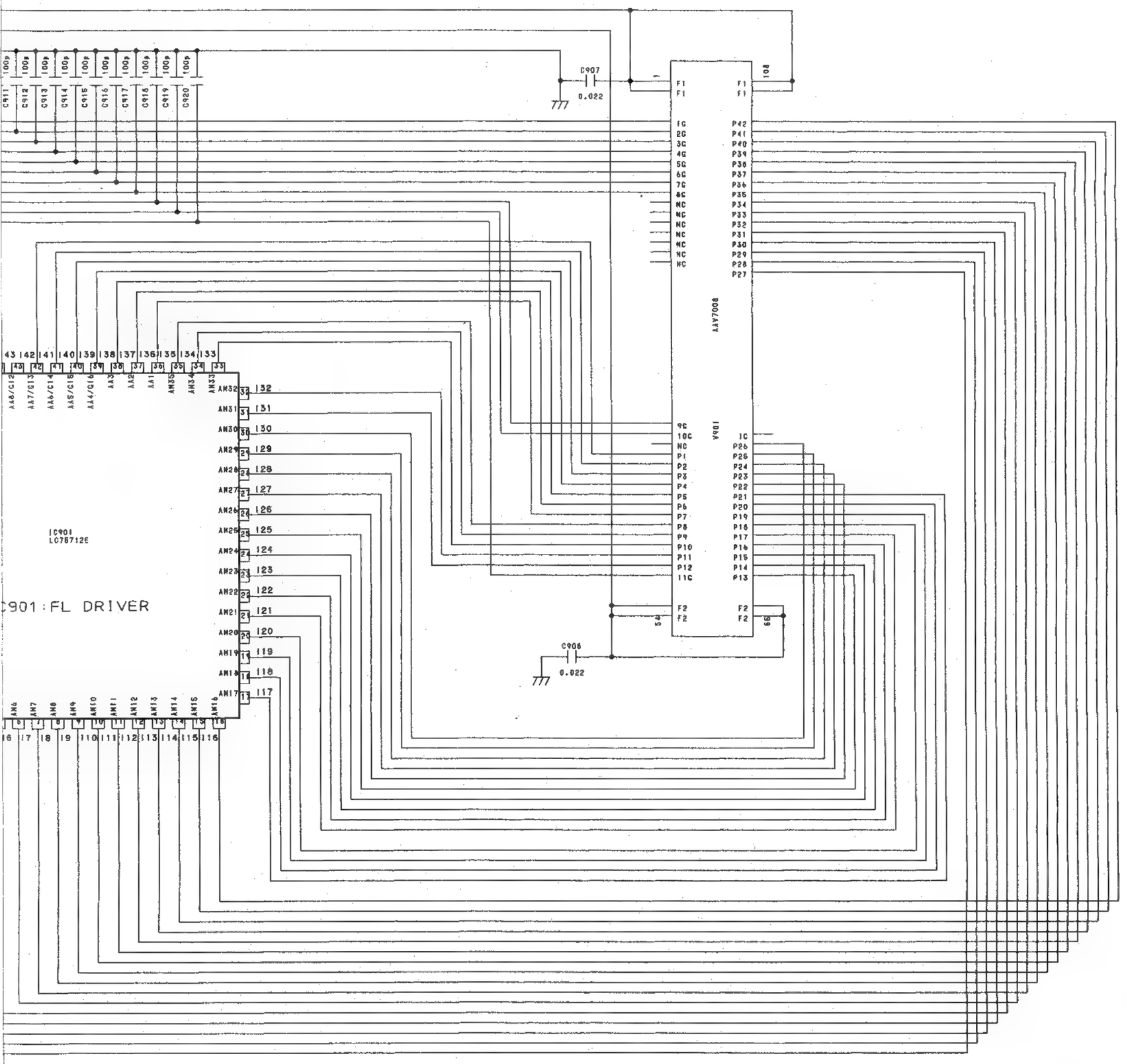
149 C6 150 C5 151 C4 152 C3 153 C2 154 C1 155 VFL 156 VSS 157 VSS 158 OSCO 159 OSCI 160 VDD 161 RES 162 CE 163 CL 164 DI

AN1 AN2 AN3 AN4 AN5 AN6 AN7 AN8 AN9 AN10 AN11

1 12 13 14 15 16 17 18 19 110 111

SCH-2 DISPLAY ASSY

SCH-2

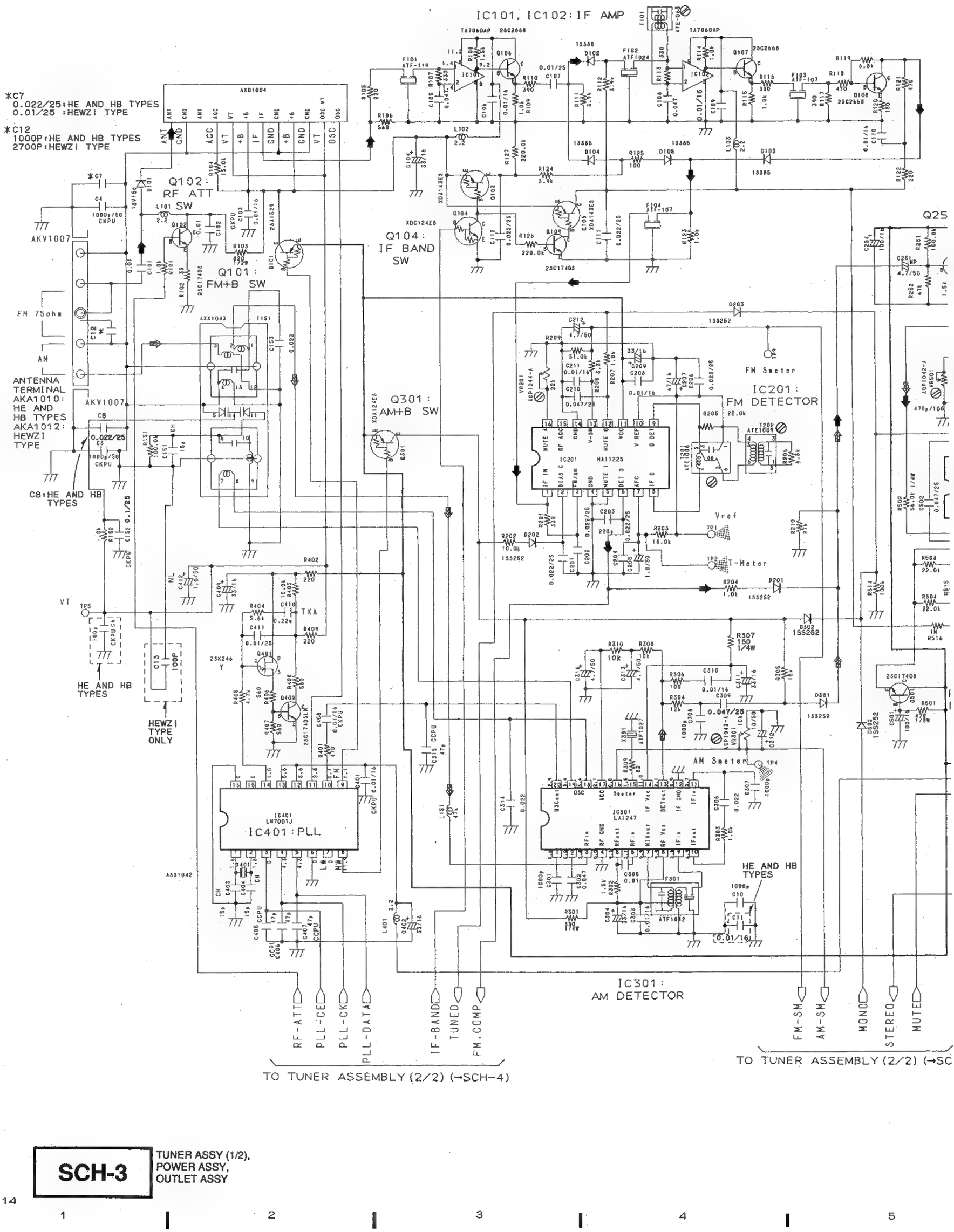


DISPLAY ASSY

SCH-2

4.3 TUNER (1/2), POWER, OUTLET ASSEMBLIES

TUNER ASSEMBLY (1/2) (AWZ7272 : HE AND HB TYPES)
(AWZ7271 : HEWZI TYPE)



SCH-3 TUNER ASSY (1/2), POWER ASSY, OUTLET ASSY

➡:FM Signal route(Lch)
⇨:AM Signal route(Lch)

TO TUNER ASSEMBLY (2/2) (→SCH-4)

FL-30V
POWER
+12V
+5.6V
GND
INT
FIL1
FIL2

IC602:
+12V REGULATOR

Q608:
+5.6V REGULATOR

POWER ASSEMBLY
(AWZ7275:HE TYPE)
(AWZ7276:HB TYPE)
(AWZ7274:HEWZI TYPE)

Q603, Q604:
+12V POWER SW

Q251:AMP

Q606, Q607:
FL POWER SW

Q605:
-30V REGULATOR

AC
Vdd
Vcc
GND
-V
FL+
FIL1
FIL2
CT

OUTLET ASSEMBLY
(AWZ7279:HE AND HEWZI TYPES)
(AWZ7278:HB TYPE)

⚠ AC SOCKET 1-P
AKP1034:HE AND HEWZI TYPES
AKP1035:HB TYPE

Q601, Q602:
FL POWER SW

IC501:FM MPX

Q501:
RIPPLE FILTER

AC POWER CORD
ADG1049
AC220-230V 50/60Hz
(HE AND HEWZI TYPES)
ADG1103
AC240V 50/60Hz
(HB TYPE)

HE AND HB TYPES
HB TYPE ONLY
POWER TRANSFORMER
HEWZI TYPE ONLY
HE AND HEWZI TYPES

Q551-Q554:MUTE

*C557, C558
470P:HE AND HB TYPES
0.01:HEWZI TYPE

*R567, R568
1.2K:HE AND HB TYPES
270 :HEWZI TYPE

IC502:AMP

*R559, R560
22K :HE AND HB TYPES
4.7K:HEWZI TYPE

Q851:BUFFER

STEREO
MUTE
SYSTEM
REMOCON

TO TUNER ASSEMBLY (2/2) (→SCH-4)

TUNER ASSY (1/2),
POWER ASSY,
OUTLET ASSY

SCH-3

Line Voltage Selection

Line Voltage can be changed by the following modification:

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the position of the jumper-lines Ⓐ follows.

Voltage	jumper—line Ⓐ position
220V—230V	①
240V	②

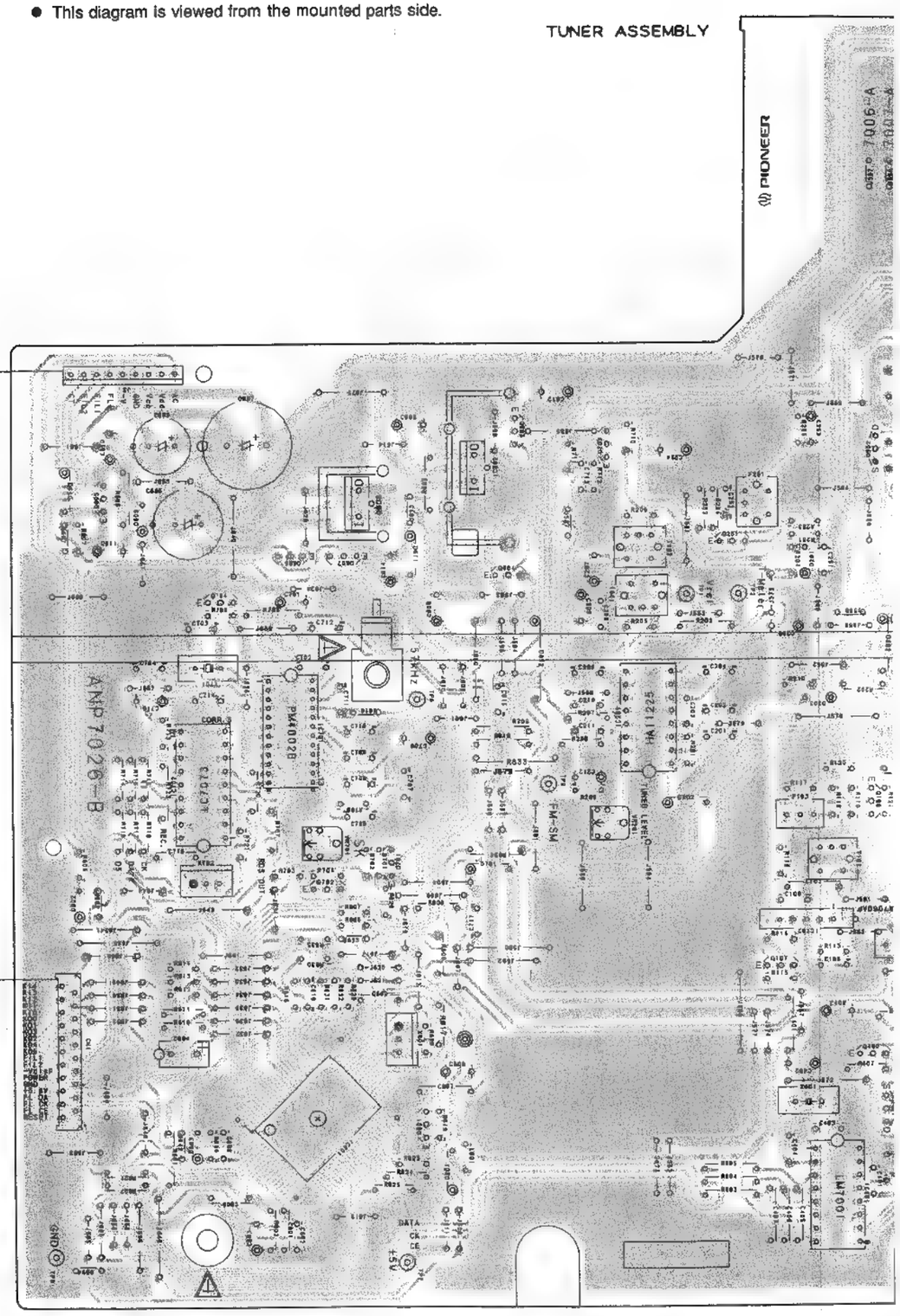
NOTE: When replacing a PCB which has the primary winding circuit of Power-transformer, be sure to compare its circuit with the diagram in Service Manual. jumper-lines on the PCB may have to be removed. Forgetting this check-up will cause a serious damage.

4. Stick a line voltage label on the rear panel.

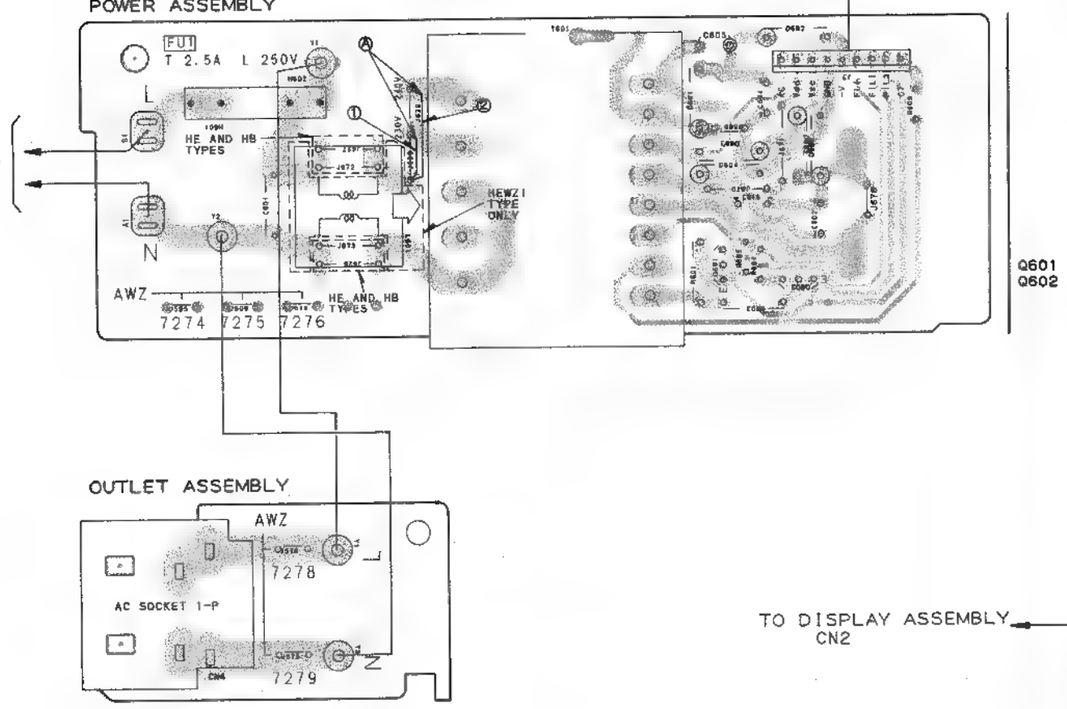
Part No.	Description
AAX—193	220V label
AAX—192	240V label

● This diagram is viewed from the mounted parts side.

TUNER ASSEMBLY



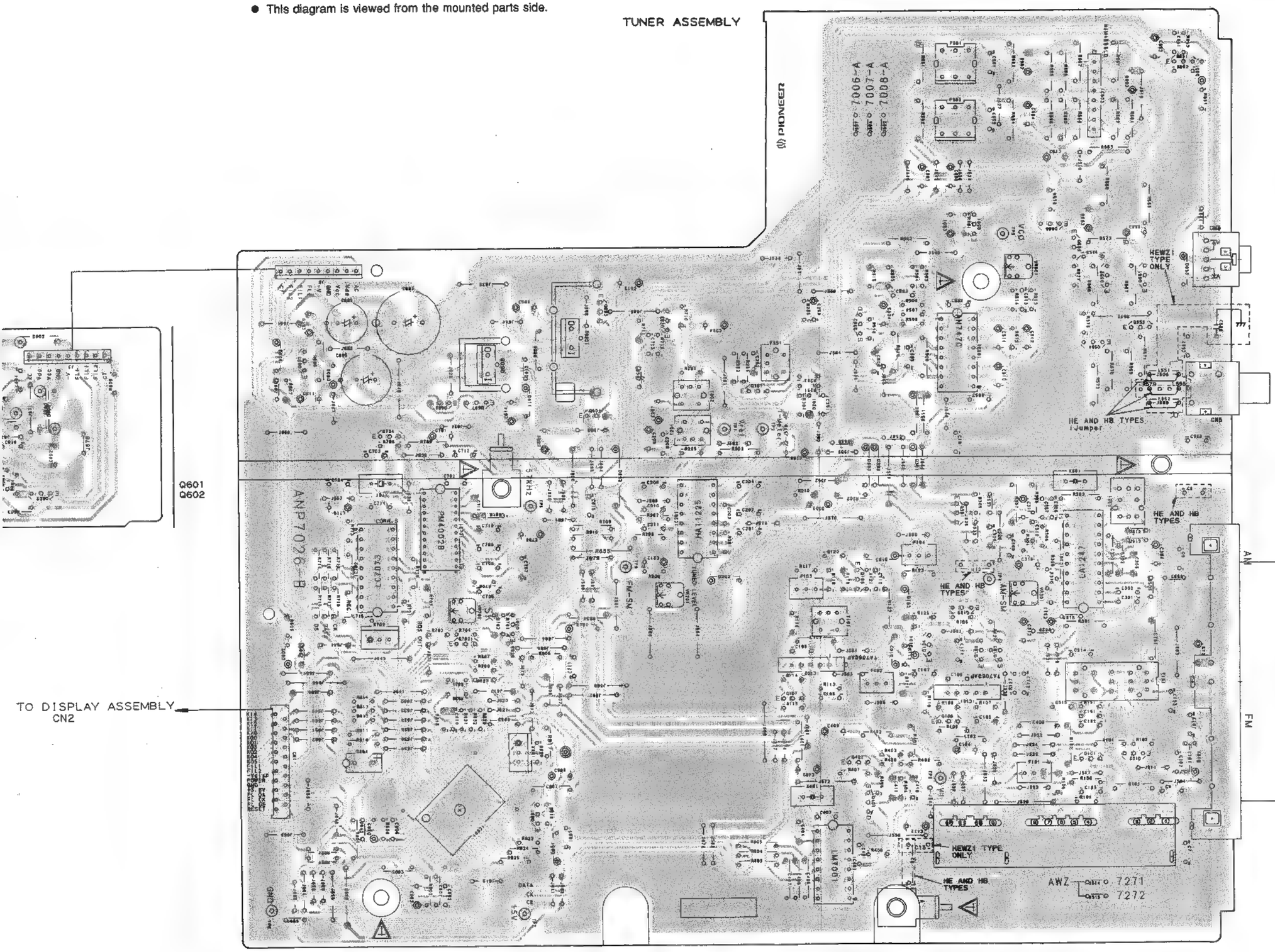
POWER ASSEMBLY



OUTLET ASSEMBLY

● This diagram is viewed from the mounted parts side.

TUNER ASSEMBLY



PCB—2

Q851		A
IC502		
Q501		—
Q556		
Q555		
VR501 Q552		
Q551		
Q603		
Q703		
Q502	Q553	B
IC602	Q554	
Q605	IC501	
Q608		
Q251		—
Q606	Q607	
Q604		
Q704		
IC701		C
IC201		
Q301		
IC301		—
IC702		
Q108		
Q109		
Q701		
Q702	Q104	
Q105	Q103	
IC102		
Q107	IC101	—
Q106		
Q101	Q102	
Q402		
IC801		
Q401		
Q801		
IC401		D

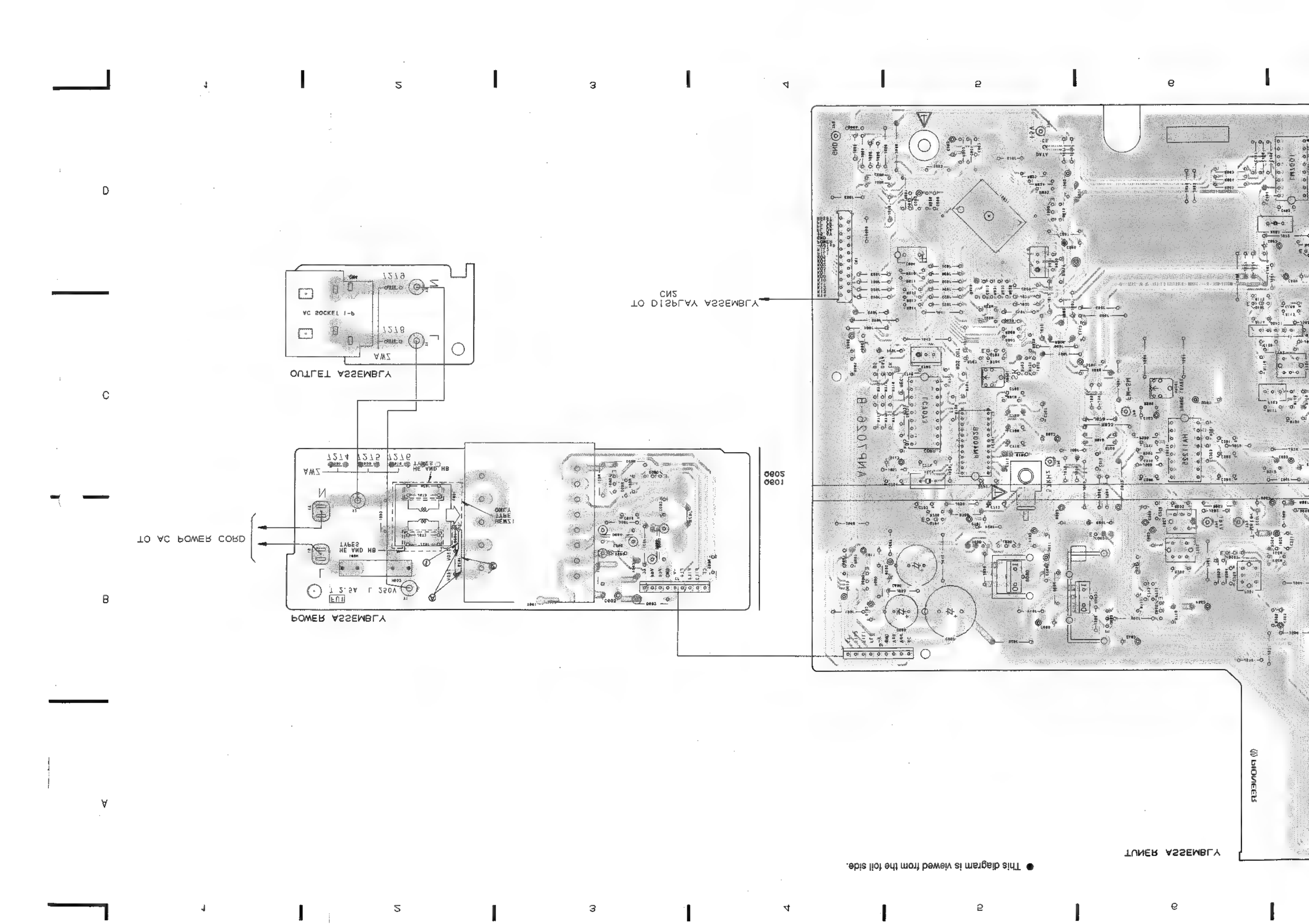
P-CARDS

P-CB-5

TUNER ASSEMBLY

● This diagram is viewed from the foil side.

CN5
TO DISPLAY ASSEMBLY


TO DISPLAY ASSEMBLY
CN5
OUTLET ASSEMBLY
AC SOCKET 1-6
TUNER ASSEMBLY
POWER ASSEMBLY
TO AC POWER CORD
● This diagram is viewed from the foil side.

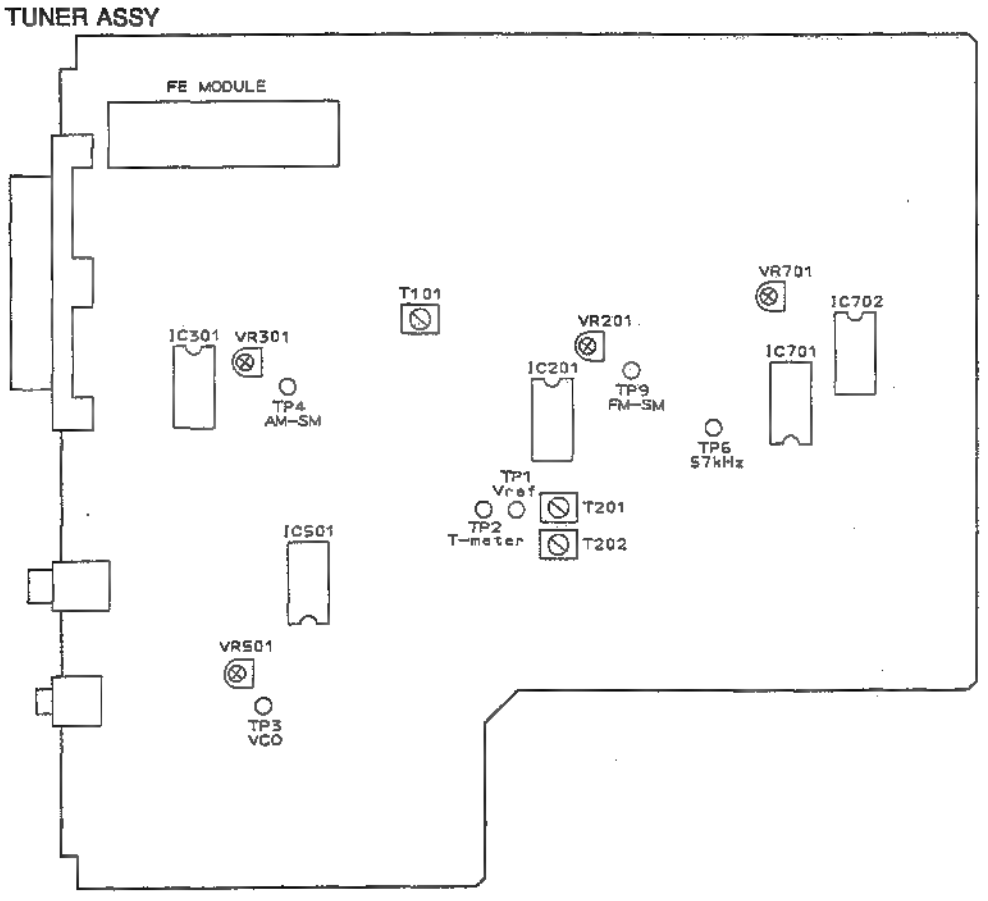


Fig. 1 Adjustment Points

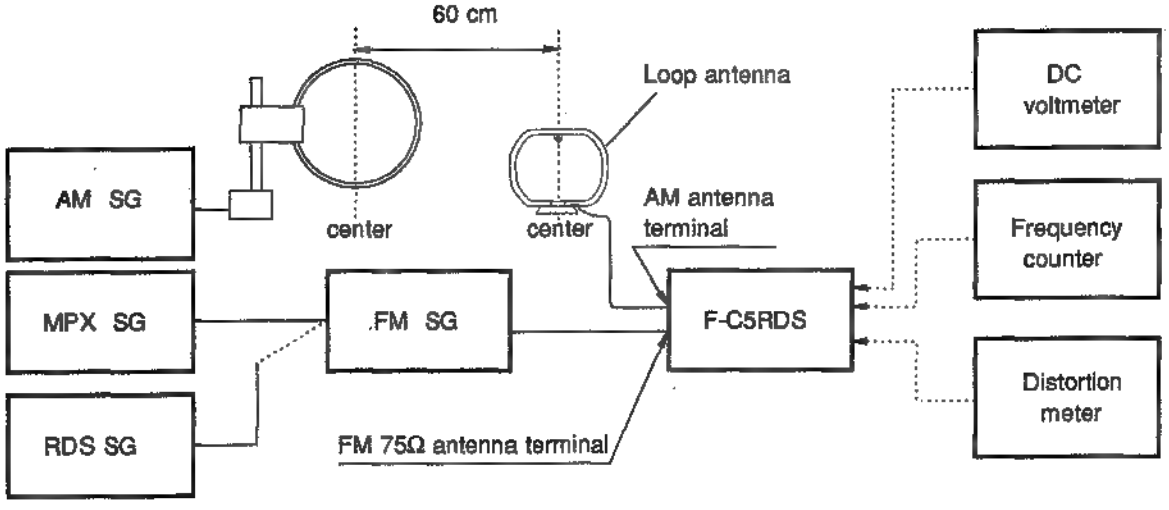


Fig. 2 Connection Diagram

7. FOR HB AND HEWZI TYPES

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

F-C5RDS/HB, HEWZI and F-C5RDS/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		F-C5RDS/HE	F-C5RDS/HB	F-C5RDS/HEWZI	
	TUNER assembly	AWE7007	AWE7008	AWE7006	
	TUNER assembly	AWZ7272	AWZ7272	AWZ7271	
	POWER assembly	AWZ7275	AWZ7276	AWZ7274	
	OUTLET assembly	AWZ7279	AWZ7278	AWZ7279	
⚠	AC power cord	ADG1049	ADG1103	ADG1049	
	Rear panel	ANC7095	ANC7096	ANC7094	
	Ferrite core	.....	.....	ATX7001	*
	Screw	.....	.....	ABA1047	*
	Operating instructions (English/German/French/Italian/ Swedish/Dutch/Spanish/Portuguese)	ARE7015	.....	.....	
	Operating instructions (English)	.....	ARB7014	.....	
	Operating instructions (German/Italian)	.....	.....	ARC7022	
	FM antenna	ADH1005	ADH1005	ADH1002	
	Plate (GND)	.....	.....	ANK1120	*

* : Refer to page4.

TUNER ASSEMBLY
AWZ7271 and AWZ7272 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7272	AWZ7271	
	R559,R560	RDR1/4PM223J	RDR1/4PM472J	
	R567,R568	RDR1/4PM122J	RDR1/4PM271J	
	R579	.....	RD1/8PM010J	
	C6	CKPUYB101K50	.....	
	C7	CKDYX223M25	CKDYX103M25	
	C8	CKDYX223M25	.....	
	C10	CKPUYB102K50	CKDYB102K50	
	C11	CKPUYY103M16	.....	
	C12	CKDYB102K50	CKDYB272K50	
	C13	.....	CKPUYB101K50	
	C557,C558	CKDYB471K50	CKDYB103K50	
	C559	.....	CKDYB102K50	
	L551,L552	.....	LAU2R2K	
	L553	.....	LAU010K	
	Antenna terminal 4—P	AKA1010	.....	
	Antenna terminal 2—P	.....	AKA1012	

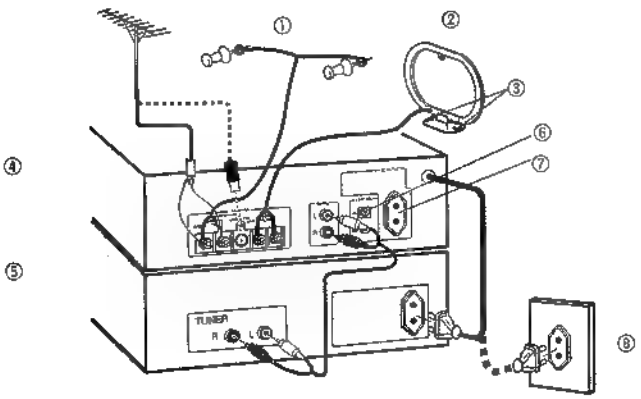
POWER ASSEMBLY
AWZ7276, AWZ7274 and AWZ7275 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ7275	AWZ7276	AWZ7274	
⚠	L601	.....	.....	ATF1135	

OUTLET ASSEMBLY
AWZ7278 and AWZ7279 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7279	AWZ7278	
⚠	AC socket 1—P	AKP1034	AKP1035	

8. CONNECTONS



① **FM T-type antenna (accessory)**
- Use thumb tacks or push pins to fasten antenna wires to a wall.
- Fasten the antenna wires on a wall, not allowing the wires to droop or bunch up.

② **AM loop antenna (accessory)**

③ **Use these holes if necessary to mount antenna on a post or wall.**

④ **F-C5RDS**

⑤ **Stereo amplifier**

⑥ **Control jack**

⑦ **AC outlet**

1. Connecting the accessory FM T-type antenna and AM loop antenna.

Twist the vinyl covering on the end of the wire to remove the covering.

▼

Unscrew the connector and twist the antenna wire around the shaft.

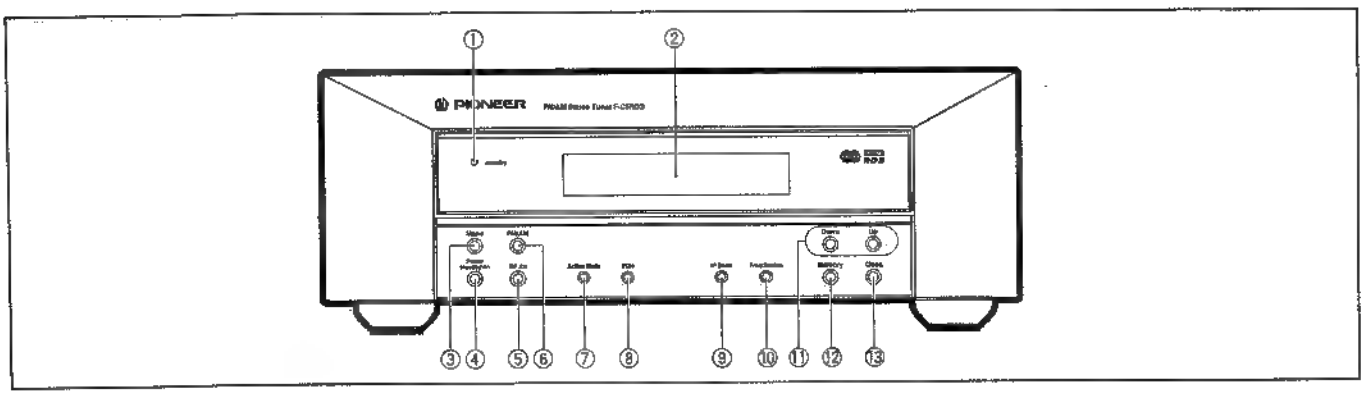
▼

Tighten securely.

- This antenna provides a simple means of receiving FM broadcasts. For better reception, however, you may wish to use a special outdoor FM antenna.
- Do not mount the AM loop antenna on the metal case of this or other components, or near a CD player, personal computer, or television.

2. Use the accessory audio cables to connect the color-coded connectors.
(connect Red to the Right channel and White to the Left channel).

9. PANEL FACILITIES



① **Standby indicator**
Goes out when power is turned on; lights when power is set to standby.

② **Display section**

③ **Mono button**

④ **Power standby/on switch**
This is the switch for electric power.
on: When set to the on position, power is supplied and the unit becomes operational.
standby: When set to the standby position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness. When the Standby indicator lights, the unit is in STANDBY.

⑤ **RF Att button**
Press this RF attenuator button if the excessive strength of FM signals results in distortion. The RF ATT indicator will light in the display section.
- This function does not operate during AM broadcasts.

⑥ **FM/AM button**

⑦ **Active Mode button**
Each time you press this button, the mode changes as follows:

FM:

RT mode.....Displays PS → RT → PTY in sequence (skipped when there is no PTY data. "RT" lights.)
↓
PS mode.....Displays PS. "PS" lights.
↓
Station name input mode .....“CHARACTER” lights. Station names of up to four characters can be input for a total of 40 preset channels. This takes priority over PS data.
↓
PTY mode .....Displays PTY. "PTY" lights.
↓
PTY search mode .....“SEARCH” lights. – (down)/+ (up) buttons can be used to select the program type. Press the Active Mode button again, and it searches for programs in your specified type.
↓
Frequency display mode ....Displays tuned-in frequency.
↓
CT mode .....Displays time data if available; otherwise displays frequency. "CT" lights.

NOTE:
The station name input mode and PTY search mode are skipped when the EON function is used for interrupt waiting.

AM:

Station name display mode
↓
Station name input mode.....“CHARACTER” lights. Station names of up to four characters can be input for a total of 40 preset channels.
↓
Frequency display mode ..Displays tuned-in frequency.

⑧ **EON button**
If receiving a station broadcasting EON information, the radio can automatically keep track of broadcast information from other network stations. If you specify traffic information (TA) or program type (PTY) beforehand, the frequency will change automatically when the specified broadcast begins.
The display's EON indicator lights when receiving a station broadcasting EON information.

⑨ **IF Band button**
Each time this button is pressed, the bandwidth of the IF circuit switches between "normal" and "narrow" for the FM band. The NARROW indicator lights up. When not lit, normal filter bandwidth is selected.
Set to NARROW in case of interference from other stations. This button does not affect AM reception.

NOTE:
This button's status is preset for each station in station memory.

⑩ **Freq/Station button**

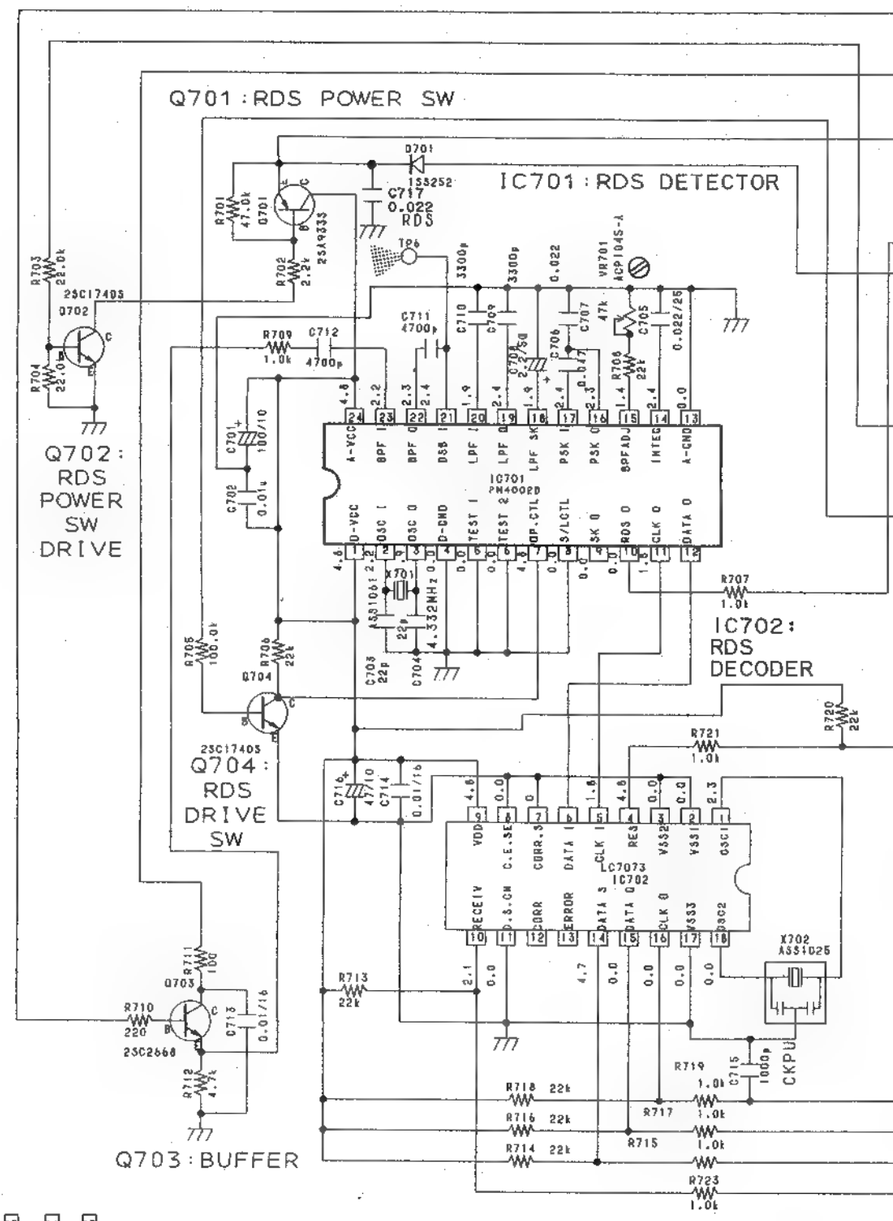
⑪ **Tuning Up+ Down– button**
Use to tune broadcast stations.

⑫ **Memory button**

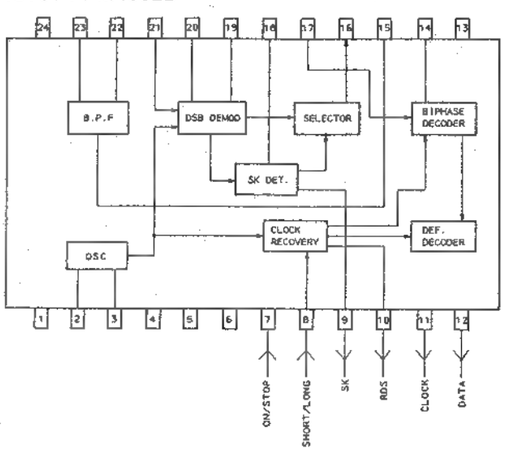
⑬ **Class button**
Use to switch between preset memory classes 1 to 4. In each class, 10 stations can be memorized using the "+"/"–" buttons, enabling a total of 40 stations to be memorized.

4.4 TUNER (2/2) ASSEMBLY

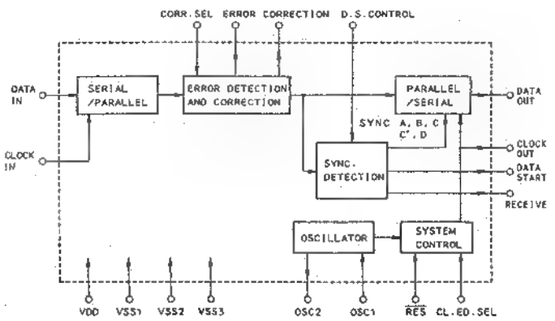
TUNER ASSEMBLY (2/2) (AWZ7272 : HE AND HB TYPES)
(AWZ7271 : HEWZI TYPE)



IC701 : PM4002B



IC702 : LC7003



SCH-4 TUNER ASSY (2/2)

TUNER ASSEMBLY (1/2) (→SCH-3)

PLL-DATA
PLL-CK
PLL-CE
REMOCON
TUNED
STEREO
MONO
RF-ATT
IF-BAND
INT

RDS CK
RDS OUT
RDS DATA
DATA START
RESET
FM+
TUNED
RECEIVE

IC801
PDG113A

PE3/INT3
PE4/RMC
PE5
PE6
PE7/T0
PB0/CINT
PB1/CSO
PB2/SCKO
PB3/SIO
PB4/SOO
PB5/SCKI
PB6/SII
PB7/SOI
PC0/KR0
PC1/KR1
PC2/KR2
PC3/KR3
PC4/KR4
PC5/KR5
PC6/KR6
PC7/KR7
PA0/AN0
PA1/AN1
PA2/AN2
PA3/AN3
PA4/AN4
PA5/AN5
PA6/AN6
PA7/AN7
RST
EXTAL
XTAL
VSS
PB0/S0
PB1/S1
PB2/S2
PB3/S3
PB4/S4
PB5/S5
PB6/S6
PF0/S8
PD7/S7
PF1/S9
PF2/S10
PF3/S11
PF4/S12
PF5/S13
PF6/S14
PF7/S15
T0
T1
T8/S24
T9/S27
T10/S26
T11/S25
T12/S21
T13/S23
T14/S22
T15/S21
S20
S19
S18
S17
S16
CE
CK
DA
TEST
NC/VPP
VDD
VPDP

RDS?
SYSTEM
FM-SM
AM-SM

Q801 : RESET
Q801
XDC143ES

7.7M

K00
K01
K02
K03
K04
KI0
KI1
KI2
KI3
KI4

+5.6V
FL CK
FL DATA
FL CE
RESET

GND
+5.6V
FM-SM
AM-SM
MUTE
POWER
SYSTEM

TO TUNER ASSEMBLY (1/2) (→SCH-3)

(SCH-2)

5. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	→	*56×10¹*	→ *561* ·····	*RD1/8PM 5 6 1 J*
47kΩ	→	*47×10³*	→ *473* ·····	*RD1/4PS 4 7 3 J*
0.5Ω	→	*0R5*	·····	*RN2H 0 R 5 K*
1Ω	→	*010*	·····	*RS1P 0 1 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	→	*562×10¹*	→ *5621* ·····	*RN1/4PC 5 6 2 1 F*

Mark	No.	Description	Parts No.	Mark
LIST OF ASSEMBLIES				
	TUNER ASSEMBLY		AWE7007	
	├— TUNER ASSEMBLY		AWZ7272	
	├— POWER ASSEMBLY		AWZ7275	
	└— OUTLET ASSEMBLY		AWZ7279	
	DISPLAY ASSEMBLY		AWP7001	
TUNER ASSEMBLY				
SEMICONDUCTORS				
	IC501		AN7470P	
	IC201		HA11225	
	IC301		LA1247	
	IC702		LC7073	
	IC401		LM7001J	
	IC502		NJM4558LD	
	IC602		NJM7812AS	
	IC801		PDG113A	
	IC701		PM4002B	
	IC101,IC102		TA7060AP	
	Q101,Q603		2SA1529	
	Q555,Q701		2SA933S	
	Q605		2SB560	
	Q102,Q109,Q251,Q501		2SC1740S	
	Q551－Q554,Q556,Q702,Q704		2SC1740S	
	Q851		2SC1740S	
	Q402		2SC1740SLN	
	Q106－Q108,Q703		2SC2668	
	Q608		2SD880	
	Q401,Q502		2SK246	
	Q301		XDA124ES	
	Q103,Q105,Q606		XDA143ES	
	Q104,Q607		XDC124ES	
	Q604,Q801		XDC143ES	
	D201－D203,D301,D302		1SS252	
	D501,D502,D701,D801,D802		1SS252	
	D851		1SS252	
	D102－D105		1SS85	
	D101		1SV156	
	D852		HSS104－02	
	D609		RD30ESB2	
	D803		RD4.7ESB	
	D610		RD5.1ESB1	
	D853		RD6.2ESB	
	D611		RD6.2ESB3	
COILS AND FILTERS				
	T101		ATE－063	
	T201		ATE1008	
	T202		ATE1009	
	F103,F104		ATF－107	
	F101		ATF－119	
	F102		ATF1024	
	F301		ATF1042	
	F501,F502		ATF1143	
	F251		ATF1152	
	L101－L103,L401,L801		LAU2R2K	
	L151		LAU470K	
CAPACITORS				
	C804		ACH1246	
	C703,C704		CCDCH220J50	
	C151,C403,C404		CCPUCH150J50	
	C315,C405－C407		CCPUSL470J50	
	C412		CEANL010M50	
	C251		CEANP4R7M50	
	C205		CEAS010M50	
	C312		CEAS100M50	
	C606,C701		CEAS101M10	
	C501		CEAS101M16	
	C611		CEAS101M35	
	C605		CEAS102M25	
	C511		CEAS1R5M50	
	C803		CEAS221M10	
	C708,C808		CEAS2R2M50	
	C104,C209,C304,C311,C402		CEAS330M16	
	C409		CEAS330M16	
	C609		CEAS331M50	
	C512		CEAS3R3M50	
	C504,C716,C852		CEAS470M10	

Mark	No.	Description	Parts No.	Mark
	C207		CEAS470M16	
	C608,C614		CEAS470M25	
	C610		CEAS470M35	
	C212,C253,C313,C316		CEAS4R7M50	
	C510		CEASR22M50	
	C254		CEEA101M16	
	C607		CEEA332M35	
	C553,C554		CEEA2R2M50	
	C560,C612,C613		CEEA470M25	
	C507,C508,C555,C556		CEEA4R7M50	
	C410		CFTXA224J50	
	C12,C308		CKDYB102K50	
	C252		CKDYB122K50	
	C709,C710		CKDYB332K50	
	C557,C558		CKDYB471K50	
	C711,C712		CKDYB472K50	
	C101,C102,C107,C305,C411		CKDYX103M25	
	C810		CKDYX103M25	
	C152,C615		CKDYX104M25	
	C111,C112,C153,C201,C202		CKDYX223M25	
	C204,C206,C306,C314,C7		CKDYX223M25	
	C705,C707,C717,C8		CKDYX223M25	
	C105,C108,C210,C302,C309,C502		CKDYX473M25	
	C706		CKDYX473M25	
	C6,C805,C851		CKPUYB101K50	
	C10,C3,C301,C307,C4		CKPUYB102K50	
	C715,C807		CKPUYB102K50	
	C503		CKPUYB121K50	
	C203		CKPUYB221K50	
	C802,C809		CKPUYF473Z16	
	C103,C106,C109,C11,C110		CKPUYY103M16	
	C208,C211,C303,C310,C401		CKPUYY103M16	
	C408,C509,C702,C713,C714		CKPUYY103M16	
	C801,C806		CKPUYY103M16	
	C551,C552		CQMA222J50	
	C505,C506		CQMXA102J100	
	C513		CQPA471J100	
RESISTORS				
	R606		RD1/2PM471J	
	R103,R608		RD1/2PM821J	
	R307		RD1/4PM151J	
	R301		RD1/4PM331J	
	R571,R572		RDR1/4PM101J	
	R555,R556		RDR1/4PM104J	
	R567,R568		RDR1/4PM122J	
	R561,R562		RDR1/4PM222J	
	R559,R560		RDR1/4PM223J	
	R551,R552		RDR1/4PM242J	
	R565,R566		RDR1/4PM271J	
	R557,R558		RDR1/4PM472J	
	R553,R554,R569,R570		RDR1/4PM562J	
	R502,R509,R510		RDR1/4PM563J	
	VR501 (4.7k)		ACP1042	
	VR301 (10k)		ACP1043	
	VR201 (22k)		ACP1044	
	VR701 (47k)		ACP1045	
		Other Resistors	RD1/8PM□□□J	
OTHERS				
		SCREW	ABA－298	
		ANTENNA TERMINAL 4－P	AKA1010	
	CN5	PIN JACK(2P)	AKB1146	

o.	Mark	Mark	No.	Description	Parts No.	Mark
M16			CN3	JACK(2P)	AKN−209	
M25			CN1	21P SOCKET	AKP1084	
M35			X702	CERAMIC RESONATOR	ASS1025	
M50			X401	CRYSTAL RESONATOR	ASS1042	
M50			X801	CERAMIC RESONATOR	ASS1055	
M16			X701	CRYSTAL RESONATOR	ASS1061	
M35			X301	CERAMIC RESONATOR	ATF1027	
M50				AM RF TUNING BLOCK	AXX1043	
M25				4 SERIAL F.E. MODULE ASSY	AXQ1004	
M50						

Note: 4 serial F.E. module assy has no servise part.

4J50					
02K50		**POWER ASSEMBLY**			
22K50					
32K50		**SEMICONDUCTORS**			
71K50			Q601,Q602		2SC2878
			D601−D606		S5566
72K50					
03M25		**TRANSFORMERS**			
03M25		⚠	T601	(14.5VA)	ATT7003
04M25					
23M25		**CAPACITORS**			
		⚠	C601	(0.01/AC400V)	ACG1002
23M25			C603		CEAS470M50
23M25			C604		CKDYF473Z50
73M25			C602,C616		CQMA473J50
73M25					
101K50		**RESISTORS**			
			R601,R603		RD1/4PM010J
102K50					
102K50				Other Resistors	RD1/8PM□□□J
121K50					
221K50		**OUTLET ASSEMBLY**			
473Z16					
		OTHERS			
103M16		⚠	CN4	AC SOCKET 1−P	AKP1034
103M16					
103M16		**DISPLAY ASSEMBLY**			
103M16					
2J50		**SEMICONDUCTORS**			
			IC901		LC75712E
102J100			Q902		2SC1740S
1J100			Q901		XDC143ES
			D901		1SS252
			D908		AEL1148
1471J					
1821J		**SWITCHES AND RELAYS**			
1151J			S901,S902,S905,S906,S911		ASG1034
1331J			S916,S917,S921,S922		ASG1034
M101J			S924−S926		ASG1034
M104J					
M122J		**CAPACITORS**			
M222J			C901		CCPUSL300J50
M223J			C904−C906		CCPUSL470J50
M242J			C902		CEJA101M10
			C909		CEJA220M35
M271J			C907,C908		CKDYX223M25
M472J			C910−C920		CKPUYB101K50
M562J			C903,C921		CKPUYY103M16
M563J					
		RESISTORS			
				Other Resistors	RD1/8PM□□□J
		OTHERS			
			V901	FL TUBE	AAV7008
				FL SPASER	AEB7006
M□□□J			CN1	21P SOCKET	AKP1086
98					
0					
6					

6. ADJUSTMENTS

6.1 FM TUNER ADJUSTMENTS

- Connect as shown in Fig. 2.
- Set the function to FM.

Step	Adjustment name	FM SG (1 kHz ± 75 kHz dev.)			FL display, IF BAND etc.	Location	Adjustment
		Frequency (MHz)	Modulation	Level (dBμV)			
1	IF sensitivity-UP adjustment	98	MONO	Low input level	98	T101	Adjust so that the voltage between TP9 and GND becomes maximum.
2	T meter adjustment	98	MONO	60	98 MHz NARROW	T201	Adjust so that the voltage between TP1 and TP2 becomes 0±50 mV.
3	MONO distortion adjustment	98	MONO	60	98 MHz NARROW	T202	Adjust so that the distortion becomes minimum.
4	Repeat step 2 and 3 until optimum adjustment is obtained.						
5	VCO adjustment	108	OFF	60	108MHz NARROW	VR501	Adjust so that the output at TP3 becomes 76 kHz ±0.5 kHz.
6	STEREO distortion adjustment (NARROW)	89(*2)	L−ONLY	60	89 MHz NARROW	T101	Turn the core of T101 within a range of ±90° and adjust so that the distortion becomes minimum.
7	Muting level adjustment	98	MONO	15 ±5dB	98 MHz NORMAL	VR201	Adjust so that the muting is released at the input level shown on the left.
8	SK level adjustment	88	EXTERNAL *1 (RDS SG)	60	88 MHz NORMAL (ATT ON)	VR701	Adjust so that the voltage between TP6 and GND becomes maximum.

*1 : RDS SG (AUDIO, PILOT, RDS, BK and DK : OFF, SK : ON)

*2 : Stereo modulation : Main 1 kHz L+R, ±68.25 kHz.
Pilot 19 kHz, ±6.75 kHz.

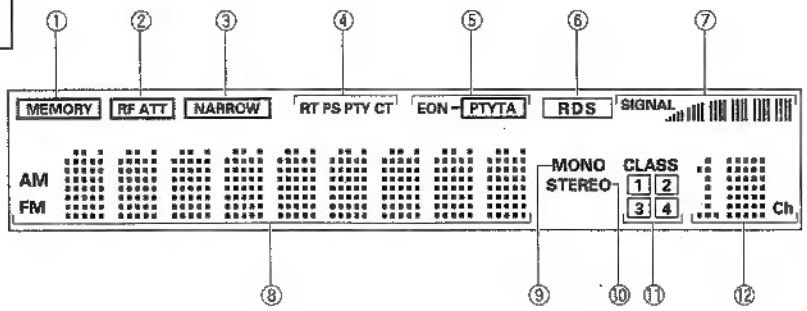
6.2 AM TUNER ADJUSTMENT

- Connect as shown in Fig. 2.
- Set the function to AM.

Step	Adjustment name	AM SG(400kHz, 30% modulation)		FL Display	Adjustment	
		Frequency(kHz)	Level(dBμV/m)		Location	Specifications
1	S meter adjustment	1008	100	1008 kHz	VR301	Adjust so that the voltage between TP4 and GND becomes 4.5V ±0.1 V.

420

Display Section
Section d'affichage
Display
Quadrante delle indicazioni



① **MEMORY indicator**

② **RF ATT indicator**
Stays lit while RF Att button is on.

③ **NARROW indicator**
Stays lit while IF Band button is set to NARROW.
When not lit, stays NORMAL.

④ **RT, PS, PTY, CT indicator**
One of these lights to indicate the selected display mode (selected by the Active Mode button).
Time is displayed when the CT data is received. It switches to frequency mode display if not lit.

⑤ **EON – PTY TA indicator**
When a station broadcasting EON information is received, EON — [ ] lights. After specifying TA or PTY, interrupt waiting begins and the TA or PTY indicator lights. When specified TA or PTY is received, TA or PTY flashes.

⑥ **RDS indicator**
Lights when an RDS broadcast is received.

⑦ **SIGNAL indicator**

⑧ **Frequency, character, clock time indicator**
CT (Clock Time) data, band RDS data and frequency data are displayed.

⑨ **MONO indicator**
Stays lit while Mono button is set to MONO.

⑩ **STEREO indicator**
Lights up when a stereo broadcast is received (the indicator does not light when the Mono button is set to MONO).

⑪ **CLASS 1, 2, 3, 4 indicator**
Shows the class selected by the Class button.
The current CLASS is displayed.

⑫ **Station indicator**
When Freq/Station button is pressed, it will show the corresponding channel number.

10. SPECIFICATIONS

FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity (IHF)	12.7 dBf (1.2 µV/75 Ω)
50 dB Quieting Sensitivity	Mono; 18 dBf (2.2 µV/75 Ω)
	Stereo; 38.3 dBf (22.6 µV/75 Ω)
Sensitivity (DIN)	Mono; 1.0 µV/75 Ω
	Stereo; 35 µV/75 Ω
Signal-to-Noise Ratio	Mono; 78 dB (at 85 dBf)
	Stereo; 74 dB (at 85 dBf)
Signal-to-Noise Ratio (DIN)	Mono; 62 dB
	Stereo; 60 dB
Distortion	0.3 % (1 kHz)
Alternate Channel Selectivity	65 dB (300 kHz)
Stereo Separation	40 dB (1 kHz)
Frequency Response	30 Hz to 15 kHz ±1 dB
Image Response Ratio	80 dB
IF Response Ratio	90 dB
Antenna Input	75 Ω unbalanced
Output	650 mV (100 % MOD.)

MW (AM) Tuner Section

Frequency range	531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna)	350 µV/m
Selectivity	30 dB
Signal-to Noise Ratio	50 dB
Antenna	Loop Antenna
Output	150 mV (30 % MOD.)

Miscellaneous

Power Requirements	AC220—230 Volts ~, 50/60 Hz
Power Consumption	16 W
Dimensions	260 (W) x 95.5 (H) x 336 (D) mm
Weight (without package)	2.4 kg

Furnished Parts

FM T-type Antenna	1
AM Loop Antenna	1
Audio connection cable with Pin Plugs	1
Operating Instructions	1
Control cable	1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.